

APPENDIX D

Part 11 of 22

Wetland Delineation Data Sheets and Site Photographs

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd002s_w1
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.319635 Long: -90.678707 Datum: WGS84
 Soil Map Unit Name: Arnheim mucky silt loam, 0 to 1 percent slopes, frequently flooded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The feature is a shrub community dominated by speckled alder and winterberry. The wetland is located on the border of an oxbow. The feature is associated with an ephemeral waterbody.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland hydrology regime is saturated.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasd002s_w1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4.0</u> (A) Total Number of Dominant Species Across All Strata: <u>4.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15.0</u></td> <td>x 1 = <u>15.0</u></td> </tr> <tr> <td>FACW species <u>65.0</u></td> <td>x 2 = <u>130.0</u></td> </tr> <tr> <td>FAC species <u>0.0</u></td> <td>x 3 = <u>0.0</u></td> </tr> <tr> <td>FACU species <u>0.0</u></td> <td>x 4 = <u>0.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>80.0</u> (A)</td> <td><u>145.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.8</u>	Total % Cover of:	Multiply by:	OBL species <u>15.0</u>	x 1 = <u>15.0</u>	FACW species <u>65.0</u>	x 2 = <u>130.0</u>	FAC species <u>0.0</u>	x 3 = <u>0.0</u>	FACU species <u>0.0</u>	x 4 = <u>0.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>80.0</u> (A)	<u>145.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15.0</u>	x 1 = <u>15.0</u>																	
FACW species <u>65.0</u>	x 2 = <u>130.0</u>																	
FAC species <u>0.0</u>	x 3 = <u>0.0</u>																	
FACU species <u>0.0</u>	x 4 = <u>0.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>80.0</u> (A)	<u>145.0</u> (B)																	
<u>50.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Alnus incana</u>	<u>35.0</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Ilex verticillata</u>	<u>15.0</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex crinita</u>	<u>15.0</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Carex intumescens</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Onoclea sensibilis</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>30.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The feature is a PSS dominated by speckled alder.																		

SOIL

Sampling Point: wasd002s_w1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

A depleted matrix was observed below a dark surface layer.



wasd002s_w1_E



wasd002s_w1_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd002f_w
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.317637 Long: -90.677684 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: PFO1Bg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
 The feature is a floodplain forest associated with the Bad River. The canopy is dominated by silver maple and black ash.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: The wetland hydrology regime is temporarily flooded.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd002f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharinum</i></u>	<u>35.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.67</u> (A/B)														
2. <u><i>Fraxinus nigra</i></u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u><i>Populus balsamifera</i></u>	<u>15.0</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>80</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>102</u></td> <td>x 2 = <u>204</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>162</u> (A)</td> <td><u>434</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.68</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>102</u>	x 2 = <u>204</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>162</u> (A)	<u>434</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>102</u>	x 2 = <u>204</u>																	
FAC species <u>10</u>	x 3 = <u>30</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>162</u> (A)	<u>434</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Fallopia convolvulus</i></u>	<u>50.0</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u><i>Carex bromoides</i></u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
3. <u><i>Osmundastrum cinnamomeum</i></u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u><i>Dryopteris intermedia</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
5. <u><i>Lysimachia ciliata</i></u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>82.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample plot is within a floodplain forest dominated by black ash and silver maple.																		

SOIL

Sampling Point: wasd002f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

A reddish loam with Manganese concentrations was observed.



wasd002f_w_E



wasd002f_w_N

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): AGG/OTG	
File #: wasd002	Date of visit(s): 09/30/2019	
Location: PLSS: <u>044N-003W-01</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.319683</u> Long: <u>-90.678568</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): W Water, 5A Arnheim mucky silt loam, 6A Moquah fine sandy loam, 809D Gogebic-Metonga-Rock outcrop complex Field Verified: The soil series was not verified. In the forested component soils were a reddish sandy loam with Manganese concentrations, and in the shrub component soils were a silty loam over very fine sandy loam.	WWI Class: T3K, T3/S3H, T3/S3K Wetland Type(s): PFO/PSS complex - Floodplain Forest/Alder Thicket	
Hydrology: The wetland hydrology regime is temporarily flooded in the forested portion and saturated in the shrub portion. The feature is associated with an open waterbody, a perennial river (Bad River), and an ephemeral stream.	Wetland Size: 3.31	Wetland Area Impacted 3.31
Vegetation: Plant Community Description(s): The floodplain forest component is dominated by black ash and silver maple, and the alder thicket component is dominated by speckled alder.		

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	Y	Y	In or adjacent to RED FLAG areas List: Trout Streams: Bad River
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	Y	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	Y	Y	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	Y	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	Y	Y	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-5: The wetland located partially in this RED FLAG area due to its presence around the banks of the Bad River
WH-6: The wetland is a PFO/PSS/PUB complex
FA-2: Associated with an old oxbow of the Bad River that has become an open waterbody, thus providing good aquatic habitat
ST-4: Floodplain hydrology
ST-5: The wetland obtains runoff from the adjacent railroad track and the road located to the North

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	Amphibians
	Y	Reptiles
	Y	Birds
	Y	Deer/mammals

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates
	Y	Fish (Bad River)

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
	X		M	C	Point source or stormwater discharge
	X		M	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		H	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
X	X		M	C	Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
X	X		M	C	Removal of large woody debris
X	X		H	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The shrub component was recently logged. The associated open waterbody is an old oxbow of the Bad River that was cut off by a railroad track. The feature is also cut off from another feature to the North by a county highway, and experiences some runoff from the railroad track and road.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat		✓			
Shoreline Protection			✓		
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	The feature is dominated by typical species for the area. Some invasive cover is present and the area has been recently logged.
Human Use Values	Visible from a county highway. Potential for hunting.
Wildlife Habitat	Good diversity of habitat types provides habitat for a variety of animals.
Fish and Aquatic Life Habitat	Bad River oxbows that contain standing water.
Shoreline Protection	Associated with open waterbodies and streams (notably the Bad River).
Flood and Stormwater Storage	Oxbow storing high amounts of water.
Water Quality Protection	Dense vegetation helps to filter water, may protect against erosion.
Groundwater Processes	Groundwater recharge and some floodplain hydrology and discharge to surface water.

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd002s_u1
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Crest Local relief (concave, convex, none): Convex Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.319749 Long: -90.678745 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>The upland sample point is located in a logged area dominated by quaking aspen.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No wetland hydrology indicators were observed.</u>		

Sampling Point: wasd002s_u1

<p><u>Tree Stratum</u> (Plot size: <u>30'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center;">Absolute % Cover</th> <th style="width: 15%; text-align: center;">Dominant Species?</th> <th style="width: 30%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u><i>Populus tremuloides</i></u></td><td style="text-align: center;"><u>30.0</u></td><td style="text-align: center;"><u>Y</u></td><td style="text-align: center;"><u>FAC</u></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>30.0</u></td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center;">Absolute % Cover</th> <th style="width: 15%; text-align: center;">Dominant Species?</th> <th style="width: 30%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u><i>Corylus cornuta</i></u></td><td style="text-align: center;"><u>50.0</u></td><td style="text-align: center;"><u>Y</u></td><td style="text-align: center;"><u>FACU</u></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>50.0</u></td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>5'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center;">Absolute % Cover</th> <th style="width: 15%; text-align: center;">Dominant Species?</th> <th style="width: 30%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u><i>Pteridium aquilinum</i></u></td><td style="text-align: center;"><u>10.0</u></td><td style="text-align: center;"><u>Y</u></td><td style="text-align: center;"><u>FACU</u></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td></tr> <tr><td>11. _____</td><td></td><td></td><td></td></tr> <tr><td>12. _____</td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>10.0</u></td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: <u>30'</u>)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center;">Absolute % Cover</th> <th style="width: 15%; text-align: center;">Dominant Species?</th> <th style="width: 30%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>0.0</u></td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table>		Absolute % Cover	Dominant Species?	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Indicator Status	1. _____				2. _____				3. _____				4. _____					<u>0.0</u>	= Total Cover		<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1.0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3.0</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33333333333333</u> (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.0</u></td> <td>x 1 = <u>0.0</u></td> </tr> <tr> <td>FACW species <u>0.0</u></td> <td>x 2 = <u>0.0</u></td> </tr> <tr> <td>FAC species <u>30.0</u></td> <td>x 3 = <u>90.0</u></td> </tr> <tr> <td>FACU species <u>60.0</u></td> <td>x 4 = <u>240.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>90.0</u> (A)</td> <td><u>330.0</u> (B)</td> </tr> </table> <p style="text-align: center;">Prevalence Index = B/A = <u>3.7</u></p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input type="checkbox"/> 3 - Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species <u>0.0</u>	x 1 = <u>0.0</u>	FACW species <u>0.0</u>	x 2 = <u>0.0</u>	FAC species <u>30.0</u>	x 3 = <u>90.0</u>	FACU species <u>60.0</u>	x 4 = <u>240.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>90.0</u> (A)	<u>330.0</u> (B)
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Remarks: (Include photo numbers here or on a separate sheet.)
 The area is dominated by quaking aspen and beaked hazelnut.

SOIL

Sampling Point: wasd002s_u1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators observed.



wasd002s_u1_NW



wasd002s_u1_SW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd002f_u
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Head slope Local relief (concave, convex, none): Convex Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.317485 Long: -90.677505 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The sample point is located within mesic hardwood forest dominated by sugar maple and black cherry.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd002f_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer saccharum</u>	<u>75.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1.0</u> (A) Total Number of Dominant Species Across All Strata: <u>2.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> (A/B)
2. <u>Prunus serotina</u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>85.0</u> = Total Cover				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>0.0</u>	x 1 =	<u>0.0</u>	
FACW species	<u>0.0</u>	x 2 =	<u>0.0</u>	
FAC species	<u>5.0</u>	x 3 =	<u>15.0</u>	
FACU species	<u>85.0</u>	x 4 =	<u>340.0</u>	
UPL species	<u>0.0</u>	x 5 =	<u>0.0</u>	
Column Totals:	<u>90.0</u> (A)		<u>355.0</u> (B)	
Prevalence Index = B/A = <u>3.9</u>				
Hydrophytic Vegetation Indicators:				
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation				
<u> </u> 2 - Dominance Test is >50%				
<u> </u> 3 - Prevalence Index is ≤3.0 ¹				
<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata:				
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ <u>0.0</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Carex pedunculata</u> <u>5.0</u> <u>Y</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ <u>5.0</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ <u>0.0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Ground layer is sparse with Carex pedunculata.				

SOIL

Sampling Point: wasd002f_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasd002f_u_SE



wasd002f_u_SW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd005f_w
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.317513 Long: -90.677310 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The feature is a PFO hardwood swamp dominated by black ash and yellow birch. Paired with upland point wasd002f_u.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland hydrology regime is saturated.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd005f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>40.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Betula alleghaniensis</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>60.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>42</u></td> <td>x 1 = <u>42</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>167</u> (A)</td> <td><u>332</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.99</u>	Total % Cover of:	Multiply by:	OBL species <u>42</u>	x 1 = <u>42</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>167</u> (A)	<u>332</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>42</u>	x 1 = <u>42</u>																	
FACW species <u>85</u>	x 2 = <u>170</u>																	
FAC species <u>40</u>	x 3 = <u>120</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>167</u> (A)	<u>332</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Betula alleghaniensis</u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Fraxinus nigra</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Alnus incana</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Glyceria striata</u>	<u>40.0</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Carex bromoides</u>	<u>20.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Carex intumescens</u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u>Dryopteris intermedia</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Iris versicolor</u>	<u>2.0</u>	<u>N</u>	<u>OBL</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>77.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample point is located within a hardwood swamp dominated by black ash and yellow birch.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wasd005f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

A depleted matrix with redox was observed.



wasd005f_w_E



wasd005f_w_NE

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): AGG/OTG	
File #: wasd005	Date of visit(s): 10/02/2019	
Location: PLSS: <u>044N-003W-01</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.317493</u> Long: <u>-90.677266</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 809D Gogebic-Metonga-Rock outcrop complex Field Verified: Series not verified. Soils were a sandy clay loam over clay loam.	WWI Class: T3K	
	Wetland Type(s): PFO - Hardwood Swamp	
	Wetland Size: 0.04	Wetland Area Impacted 0.04
Hydrology: The wetland hydrology regime is saturated.	Vegetation: Plant Community Description(s): The wetland is a hardwood swamp dominated by Fraxinus nigra and Betula alleghaniensis.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	Y	Y	In or adjacent to RED FLAG areas List: Trout Streams: Bad River
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	N	N	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	N	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: Located on private land
HU-5: Fairly close to the Bad River, adjacent to but not in the Trout Stream RED FLAG area
WQ-1: The wetland is of small physical size, but it a densely vegetated depression

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Birds
	Y	Mammals
	Y	Amphibians

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The species are typical of a hardwood swamp plant community found in the area. Diversity is somewhat low but no invasive species were observed.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		L	U	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
		X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature is relatively undisturbed, with a road located on the edge of the buffer area on the other side of the Bad River.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat					✓
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Dominated by good assemblage of native species.
Human Use Values	No visible uses.
Wildlife Habitat	Relatively undisturbed.
Fish and Aquatic Life Habitat	N/A
Shoreline Protection	N/A
Flood and Stormwater Storage	Shallow basin that allows limited recharge.
Water Quality Protection	Shallow basin that allows limited water to infiltrate.
Groundwater Processes	Recharge feature that may flood during extreme events when the Bad River overflows.

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd002f_u
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Head slope Local relief (concave, convex, none): Convex Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.317485 Long: -90.677505 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The sample point is located within mesic hardwood forest dominated by sugar maple and black cherry.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd002f_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer saccharum</u>	<u>75.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1.0</u> (A) Total Number of Dominant Species Across All Strata: <u>2.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> (A/B)
2. <u>Prunus serotina</u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>85.0</u> = Total Cover				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>0.0</u>	x 1 =	<u>0.0</u>	
FACW species	<u>0.0</u>	x 2 =	<u>0.0</u>	
FAC species	<u>5.0</u>	x 3 =	<u>15.0</u>	
FACU species	<u>85.0</u>	x 4 =	<u>340.0</u>	
UPL species	<u>0.0</u>	x 5 =	<u>0.0</u>	
Column Totals:	<u>90.0</u> (A)		<u>355.0</u> (B)	
Prevalence Index = B/A = <u>3.9</u>				
Hydrophytic Vegetation Indicators:				
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation				
<u> </u> 2 - Dominance Test is >50%				
<u> </u> 3 - Prevalence Index is ≤3.0 ¹				
<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata:				
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ <u>0.0</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Carex pedunculata</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ <u>5.0</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ <u>0.0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Ground layer is sparse with Carex pedunculata.				

SOIL

Sampling Point: wasd002f_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasd002f_u_SE



wasd002f_u_SW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd007s_w
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.315831 Long: -90.676816 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The feature is an alder thicket dominated by speckled alder. There is an intermittent stream running through the wetland.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland hydrology regime is saturated.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasd007s_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Abies balsamea</i></u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>3.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.0</u></td> <td>x 1 = <u>0.0</u></td> </tr> <tr> <td>FACW species <u>172.0</u></td> <td>x 2 = <u>344.0</u></td> </tr> <tr> <td>FAC species <u>15.0</u></td> <td>x 3 = <u>45.0</u></td> </tr> <tr> <td>FACU species <u>0.0</u></td> <td>x 4 = <u>0.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>187.0</u> (A)</td> <td><u>389.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.1</u>	Total % Cover of:	Multiply by:	OBL species <u>0.0</u>	x 1 = <u>0.0</u>	FACW species <u>172.0</u>	x 2 = <u>344.0</u>	FAC species <u>15.0</u>	x 3 = <u>45.0</u>	FACU species <u>0.0</u>	x 4 = <u>0.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>187.0</u> (A)	<u>389.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0.0</u>	x 1 = <u>0.0</u>																	
FACW species <u>172.0</u>	x 2 = <u>344.0</u>																	
FAC species <u>15.0</u>	x 3 = <u>45.0</u>																	
FACU species <u>0.0</u>	x 4 = <u>0.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>187.0</u> (A)	<u>389.0</u> (B)																	
<u>100.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Alnus incana</i></u>	<u>90.0</u>	<u>Y</u>	<u>FACW</u>															
2. <u><i>Acer rubrum</i></u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
3. <u><i>Populus tremuloides</i></u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>100.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Carex bromoides</i></u>	<u>75.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Solidago gigantea</i></u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
3. <u><i>Equisetum pratense</i></u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>82.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample plot is located in an alder thicket dominated by speckled alder.																		

SOIL

Sampling Point: wasd007s_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

A depleted matrix with redox was observed.



wasd007s_w_E



wasd007s_w_NE

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): AGG/OTG	
File #: wasd007		Date of visit(s): 10/02/2019	
Location: PLSS: <u>044N-003W-01</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.315873</u> Long: <u>90.766768</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 809D Gogebic-Metonga-Rock outcrop complex		WWI Class: N/A	
Field Verified: Series not verified. Soils were a clay loam.		Wetland Type(s): PSS - Alder Thicket	
		Wetland Size: 0.04	Wetland Area Impacted 0.04
Hydrology: The wetland hydrology regime is saturated.		Vegetation: Plant Community Description(s): The wetland is an alder thicket dominated by <i>Alnus incana</i> , and the herbaceous layer consists predominantly of <i>Carex bromoides</i> .	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	N	N	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	Y	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

WH-4: The feature is located adjacent to a road, but the wetland is otherwise connected to a large habitat block
ST-1: An intermittent stream is associated with the wetland
GW-1: Fed by groundwater and flood events

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

[illegible]

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

[illegible]

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
	X		M	C	Point source or stormwater discharge
	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		M	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
	X		L	C	Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

A road is adjacent to the wetland, but the feature is otherwise relatively undisturbed.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat	✓				
Fish and Aquatic Life Habitat	✓				
Shoreline Protection			✓		
Flood and Stormwater Storage		✓			
Water Quality Protection	✓				
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	Good diversity of native species.
Human Use Values	No observed uses.
Wildlife Habitat	Small densely shrubbed wetland.
Fish and Aquatic Life Habitat	Marginal potential habitat due to frequent saturation and the associated stream.
Shoreline Protection	Dense vegetation prevents erosion.
Flood and Stormwater Storage	Feature has a stream running through it.
Water Quality Protection	Doesn't hold a significant quantity of water.
Groundwater Processes	Groundwater-fed discharge feature associated with a stream.

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd007_u
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Head slope Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.315825 Long: -90.676973 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The sample plot is located within mesic forest dominated by aspen.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasd007_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>5.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.0</u></td> <td>x 1 = <u>0.0</u></td> </tr> <tr> <td>FACW species <u>0.0</u></td> <td>x 2 = <u>0.0</u></td> </tr> <tr> <td>FAC species <u>90.0</u></td> <td>x 3 = <u>270.0</u></td> </tr> <tr> <td>FACU species <u>15.0</u></td> <td>x 4 = <u>60.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>105.0</u> (A)</td> <td><u>330.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.1</u>	Total % Cover of:	Multiply by:	OBL species <u>0.0</u>	x 1 = <u>0.0</u>	FACW species <u>0.0</u>	x 2 = <u>0.0</u>	FAC species <u>90.0</u>	x 3 = <u>270.0</u>	FACU species <u>15.0</u>	x 4 = <u>60.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>105.0</u> (A)	<u>330.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0.0</u>	x 1 = <u>0.0</u>																	
FACW species <u>0.0</u>	x 2 = <u>0.0</u>																	
FAC species <u>90.0</u>	x 3 = <u>270.0</u>																	
FACU species <u>15.0</u>	x 4 = <u>60.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>105.0</u> (A)	<u>330.0</u> (B)																	
<u>10.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Populus tremuloides</i></u>	<u>60.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u><i>Abies balsamea</i></u>	<u>25.0</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>85.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Carex pedunculata</i></u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Pyrola elliptica</i></u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>10.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample point is dominated by aspen saplings.																		

SOIL

Sampling Point: wasd007_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators were observed.



wasd007_u_N



wasd007_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd006f_w1
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.314903 Long: -90.677390 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The feature is a hardwood swamp dominated by black ash. There is a diversity of habitat types across the wetland where trees become more or less dominant but they always remain present.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) ___ Water Marks (B1) ___ Sediment Deposits (B2) ___ Drift Deposits (B3) ___ Algal Mat or Crust (B4) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Sparsely Vegetated Concave Surface (B8)	___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13) ___ Marl Deposits (B15) ___ Hydrogen Sulfide Odor (C1) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Presence of Reduced Iron (C4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Thin Muck Surface (C7) ___ Other (Explain in Remarks)	___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland hydrology regime is seasonally flooded. The feature is a discharge wetland.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasd006f_w1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Thuja occidentalis</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Betula alleghaniensis</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>137</u></td> <td>x 2 = <u>274</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>162</u> (A)</td> <td><u>349</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.15</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>137</u>	x 2 = <u>274</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>162</u> (A)	<u>349</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>137</u>	x 2 = <u>274</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>162</u> (A)	<u>349</u> (B)																	
<u>20.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Betula alleghaniensis</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Acer rubrum</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Alnus incana</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Ilex verticillata</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex bromoides</u>	<u>75.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Doellingeria umbellata</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
3. <u>Onoclea sensibilis</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
4. <u>Dryopteris intermedia</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Solidago gigantea</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>92.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample plot is located within a wet forest dominated by black ash.																		

SOIL

Sampling Point: wasd006f_w1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: parent material

Depth (inches): 8

Hydric Soil Present? Yes ✓ No

Remarks:

A mucky mineral soil was observed.



wasd006f_w1_S



wasd006f_w1_SW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd006f_w2
 Investigator(s): BRG/DGL Section, Township, Range: 044N-003W-12
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.312737 Long: -90.675681 Datum: WGS84
 Soil Map Unit Name: Minocqua-Pleine-Cathro complex, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a large hardwood swamp located in a depression within a young disturbed forest.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The hydrologic regime is seasonally saturated, with recharge hydrology. Rain events occurred in the days prior to survey.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd006f_w2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)														
2. <u>Abies balsamea</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Thuja occidentalis</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Betula alleghaniensis</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
5. <u>Tsuga canadensis</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>65.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>49</u></td> <td>x 3 = <u>147</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>144</u> (A)</td> <td><u>372</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.58</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>49</u>	x 3 = <u>147</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>144</u> (A)	<u>372</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>70</u>	x 2 = <u>140</u>																	
FAC species <u>49</u>	x 3 = <u>147</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>144</u> (A)	<u>372</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Abies balsamea</u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Corylus cornuta</u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>25</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex bromoides</u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Athyrium angustum</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
3. <u>Dryopteris intermedia</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
4. <u>Carex crinita</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>															
5. <u>Carex gracillima</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. <u>Cornus canadensis</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
7. <u>Symphyotrichum lateriflorum</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>54</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The wetland is dominated by Fraxinus nigra and Carex bromoides, with frequent small tussocks and variable tree species present.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wasd006f_w2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Loamy mucky mineral with redox throughout the profile.



wasd006f_w2_E



wasd006f_w2_W

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): AGG/OTG	
File #: wasd006	Date of visit(s): 10/02/2019	
Location: PLSS: <u>044N-003W-01</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.314982</u> Long: <u>-90.67735</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 809D Gogebic-Metonga-Rock outcrop complex, 809C Gogebic-Metonga-Rock outcrop complex, 5170A Minocqua-Pleine-Cathro complex Field Verified: Series not verified. Soils were a mucky mineral above a restrictive layer of parent material.	WWI Class: T3/5K	
	Wetland Type(s): PFO/PEM complex - Hardwood Swamp/Fresh Wet Meadow	
	Wetland Size: 8.18	Wetland Area Impacted 8.18
Hydrology: The wetland hydrology regime is seasonally flooded. The feature is a discharge wetland.	Vegetation: Plant Community Description(s): Hardwood swamp dominated primarily by a canopy of <i>Fraxinus nigra</i> . <i>Carex bromoides</i> is very common in the herbaceous layer.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	Y	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	Y	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

<p>HU-3: Located on private land</p> <p>WH-6: Trees become more or less dominant in parts of the wetland (but are always present)</p> <p>WH-9: Standing water is frequently present between hummocks</p> <p>SP-1: An intermittent stream feature runs through a portion of the wetland</p> <p>ST-5: The feature is adjacent to a wide road</p> <p>GW-1: The feature is groundwater-fed, and also obtains some water from flooding</p>

List: direct observation, tracks, scat, other sign; **type of habitat:** nesting, migratory, winter, etc.

[illegible]

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

[illegible]

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)*

	Low	Medium	High	Exceptional
Invasive species cover	> 50% <input type="checkbox"/>	20-50% <input type="checkbox"/>	10-20% <input type="checkbox"/>	<10% <input checked="" type="checkbox"/>
Strata	Missing stratum(a) <input type="checkbox"/> or bare due to invasive species	All strata present but reduced native species <input type="checkbox"/>	All strata present and good assemblage of native species <input checked="" type="checkbox"/>	All strata present, conservative species represented <input type="checkbox"/>
NHI plant community ranking	S4 <input type="checkbox"/>	S3 <input checked="" type="checkbox"/>	S2 <input type="checkbox"/>	S1-S2 (S2 high quality) <input type="checkbox"/>
Relative frequency of plant community in watershed	Abundant <input type="checkbox"/>	Common <input checked="" type="checkbox"/>	Uncommon <input type="checkbox"/>	Rare <input type="checkbox"/>
FQI (optional)	<13 <input type="checkbox"/>	13-23 <input type="checkbox"/>	23-32 <input type="checkbox"/>	>32 <input type="checkbox"/>
Mean C (optional)	<2.4 <input type="checkbox"/>	2.4-4.2 <input type="checkbox"/>	4.3-4.7 <input type="checkbox"/>	>4.7 <input type="checkbox"/>

*Note: separate plant communities are described independently

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Fraxinus nigra			PFO	Common
Thuja occidentalis			PFO	Common
Betula alleghaniensis			PFO	Common
Acer rubrum			PFO	Uncommon
Alnus incana			PFO	Uncommon
Ilex verticillata			PFO	Uncommon
Carex bromoides			PFO	Abundant
Doellingeria umbellata			PFO	Uncommon
Onoclea sensibilis			PFO	Uncommon
Dryopteris intermedia			PFO	Uncommon
Solidago gigantea			PFO	Uncommon
Abies balsamea			PFO	Common
Tsuga canadensis			PFO	Uncommon
Corylus cornuta			PFO	Common
Athyrium angustum			PFO	Uncommon
Carex crinita			PFO	Uncommon
Carex gracillima			PFO	Uncommon
Cornus canadensis			PFO	Uncommon
Symphytotrichum lateriflorum			PFO	Uncommon

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

The ground layer is dominated by Carex bromoides with other forbs and ferns intermixed. There are multiple different shrub and tree species within the wetland. No invasive species were observed and the feature has a diversity of habitat types.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
X	X		M	C	Point source or stormwater discharge
X	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		M	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature is located on private land. A small part of the wetland is adjacent to a road (and the intermittent stream running through the wetland is also influenced by this road), but the wetland is otherwise relatively undisturbed.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat		✓			
Shoreline Protection			✓		
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	Good diversity of native species.
Human Use Values	No observed uses, hunting potential.
Wildlife Habitat	Large wetland with a variety of habitats.
Fish and Aquatic Life Habitat	Standing water present between hummocks.
Shoreline Protection	Dense vegetation prevents erosion.
Flood and Stormwater Storage	Feature has a stream running through it and is very large.
Water Quality Protection	Holds a significant amount of water.
Groundwater Processes	Large groundwater-fed discharge feature.

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-02
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd006_u1
 Investigator(s): AGG/OTG Section, Township, Range: 044N-003W-01
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): None Slope (%): 8-15%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.315008 Long: -90.677433 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Young mesic hardwood forest on a slope.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No wetland hydrology indicators were observed.</u>		

VEGETATION – Use scientific names of plants.

Sampling Point: wasd006_u1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>15.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>6.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>15.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.0</u></td> <td>x 1 = <u>0.0</u></td> </tr> <tr> <td>FACW species <u>0.0</u></td> <td>x 2 = <u>0.0</u></td> </tr> <tr> <td>FAC species <u>145.0</u></td> <td>x 3 = <u>435.0</u></td> </tr> <tr> <td>FACU species <u>55.0</u></td> <td>x 4 = <u>220.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>200.0</u> (A)</td> <td><u>655.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.3</u>	Total % Cover of:	Multiply by:	OBL species <u>0.0</u>	x 1 = <u>0.0</u>	FACW species <u>0.0</u>	x 2 = <u>0.0</u>	FAC species <u>145.0</u>	x 3 = <u>435.0</u>	FACU species <u>55.0</u>	x 4 = <u>220.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>200.0</u> (A)	<u>655.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0.0</u>	x 1 = <u>0.0</u>																	
FACW species <u>0.0</u>	x 2 = <u>0.0</u>																	
FAC species <u>145.0</u>	x 3 = <u>435.0</u>																	
FACU species <u>55.0</u>	x 4 = <u>220.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>200.0</u> (A)	<u>655.0</u> (B)																	
<u>110.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Acer rubrum</i></u>	<u>75.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u><i>Corylus cornuta</i></u>	<u>25.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Abies balsamea</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>110.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Pteridium aquilinum</i></u>	<u>15.0</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Rubus idaeus</i></u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Dryopteris intermedia</i></u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
4. <u><i>Cornus canadensis</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
5. <u><i>Osmunda claytoniana</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
6. <u><i>Carex pedunculata</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>75.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The sample plot is located in an area heavily dominated by shrubs and saplings. There are very few mature trees in the area.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														

SOIL

Sampling Point: wasd006_u1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasd006_u1_E



wasd006_u1_N

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd006_u2
 Investigator(s): BRG/DGL Section, Township, Range: 044N-003W-12
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.312447 Long: -90.675662 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>The upland is a young upland forest that has been disturbed in the past.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No indicators of wetland hydrology were observed.</u>		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd006_u2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Quercus rubra</u>	<u>20.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)														
2. <u>Populus tremuloides</u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Tsuga canadensis</u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>															
4. <u>Abies balsamea</u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Acer saccharum</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. <u>Betula alleghaniensis</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
7. _____	_____	_____	_____															
		<u>65.0</u>	= Total Cover															
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Acer saccharum</u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>73</u></td> <td>x 3 = <u>219</u></td> </tr> <tr> <td>FACU species <u>94</u></td> <td>x 4 = <u>376</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>169</u> (A)</td> <td><u>599</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.54</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>73</u>	x 3 = <u>219</u>	FACU species <u>94</u>	x 4 = <u>376</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>169</u> (A)	<u>599</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>2</u>	x 2 = <u>4</u>																	
FAC species <u>73</u>	x 3 = <u>219</u>																	
FACU species <u>94</u>	x 4 = <u>376</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>169</u> (A)	<u>599</u> (B)																	
2. <u>Abies balsamea</u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Betula papyrifera</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
4. <u>Quercus rubra</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
5. <u>Tsuga canadensis</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. <u>Prunus serotina</u>	<u>2.0</u>	<u>N</u>	<u>FACU</u>															
7. _____	_____	_____	_____															
		<u>62</u>	= Total Cover															
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Cornus canadensis</u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Carex pedunculata</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Diervilla lonicera</u>	<u>10.0</u>	<u>Y</u>	<u>NI</u>															
4. <u>Acer saccharum</u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
5. <u>Trientalis borealis</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
6. <u>Rubus pubescens</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
7. <u>Phegopteris connectilis</u>	<u>2.0</u>	<u>N</u>	<u>FACU</u>															
8. <u>Rubus idaeus</u>	<u>1.0</u>	<u>N</u>	<u>FAC</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
		<u>52</u>	= Total Cover															
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
		<u>0.0</u>	= Total Cover															
Remarks: (Include photo numbers here or on a separate sheet.) Sample plot is dominated by Quercus rubra, Populus tremuloides, and Acer saccharum.																		

SOIL

Sampling Point: wasd006_u2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators observed.



wasd006_u2_E



wasd006_u2_W

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 10-Oct-19

Applicant/Owner: Enbridge State: WI Sampling Point: wasw039f

Investigator(s): ES/WC Section, Township, Range: S. 7 T. 44N R. 2W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 26.7 % / 15.0

Subregion (LRR or MLRA): LRR K Lat.: 46.31113428 Long.: -90.67361266 Datum: WGS 1984

Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: (Explain alternative procedures here or in a separate report.)	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (minimum of 2 required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Dominant Species?				Sampling Point: <u>wasw039f</u>	
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. <u><i>Tsuga canadensis</i></u>	<u>25</u>	<input checked="" type="checkbox"/> 28.7%	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)	
2. <u><i>Acer rubrum</i></u>	<u>15</u>	<input type="checkbox"/> 17.2%	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3. <u><i>Betula alleghaniensis</i></u>	<u>35</u>	<input checked="" type="checkbox"/> 40.2%	<u>FAC</u>	Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)	
4. <u><i>Acer saccharum</i></u>	<u>12</u>	<input type="checkbox"/> 13.8%	<u>FACU</u>		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	87 = Total Cover			Prevalence Index worksheet:	
1. <u><i>Abies balsamea</i></u>	<u>15</u>	<input checked="" type="checkbox"/> 68.2%	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____	
2. <u><i>Ostrya virginiana</i></u>	<u>5</u>	<input checked="" type="checkbox"/> 22.7%	<u>FACU</u>	OBL species <u>20</u> x 1 = <u>20</u>	
3. <u><i>Salix petiolaris</i></u>	<u>2</u>	<input type="checkbox"/> 9.1%	<u>FACW</u>	FACW species <u>19</u> x 2 = <u>38</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	FAC species <u>115</u> x 3 = <u>345</u>	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	FACU species <u>42</u> x 4 = <u>168</u>	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	UPL species <u>0</u> x 5 = <u>0</u>	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Column Totals: <u>196</u> (A) <u>571</u> (B)	
Herb Stratum (Plot size: <u>5'</u>)	22 = Total Cover			Prevalence Index = B/A = <u>2.913</u>	
1. <u><i>Dryopteris Intermedia</i></u>	<u>50</u>	<input checked="" type="checkbox"/> 57.5%	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
2. <u><i>Rubus pubescens</i></u>	<u>7</u>	<input type="checkbox"/> 8.0%	<u>FACW</u>	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
3. <u><i>Carex crinita</i></u>	<u>20</u>	<input checked="" type="checkbox"/> 23.0%	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance Test is > 50%	
4. <u><i>Solidago gigantea</i></u>	<u>5</u>	<input type="checkbox"/> 5.7%	<u>FACW</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹	
5. <u><i>Phalaris arundinacea</i></u>	<u>5</u>	<input type="checkbox"/> 5.7%	<u>FACW</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Definitions of Vegetation Strata:	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
12. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot size: <u>15'</u>)	87 = Total Cover				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%	_____		
	0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)					
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FW

Sampling Point: wasw039f

Northcentral and Northeast Region - Version 2.0

Plot ID: wasw039f

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: DSCN8042.JPG

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: DSCN8043.JPG

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

Plot ID: **wasw039f**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Pho



Photo File: **DSCN8047.JP** Orientation: -facing
Long/Easting: Lat/Northing:
Description:

Photo File: **DSCN8048.JPG** Orientation: -facing
Long/Easting: Lat/Northing:
Description:

No Photo

No Photo

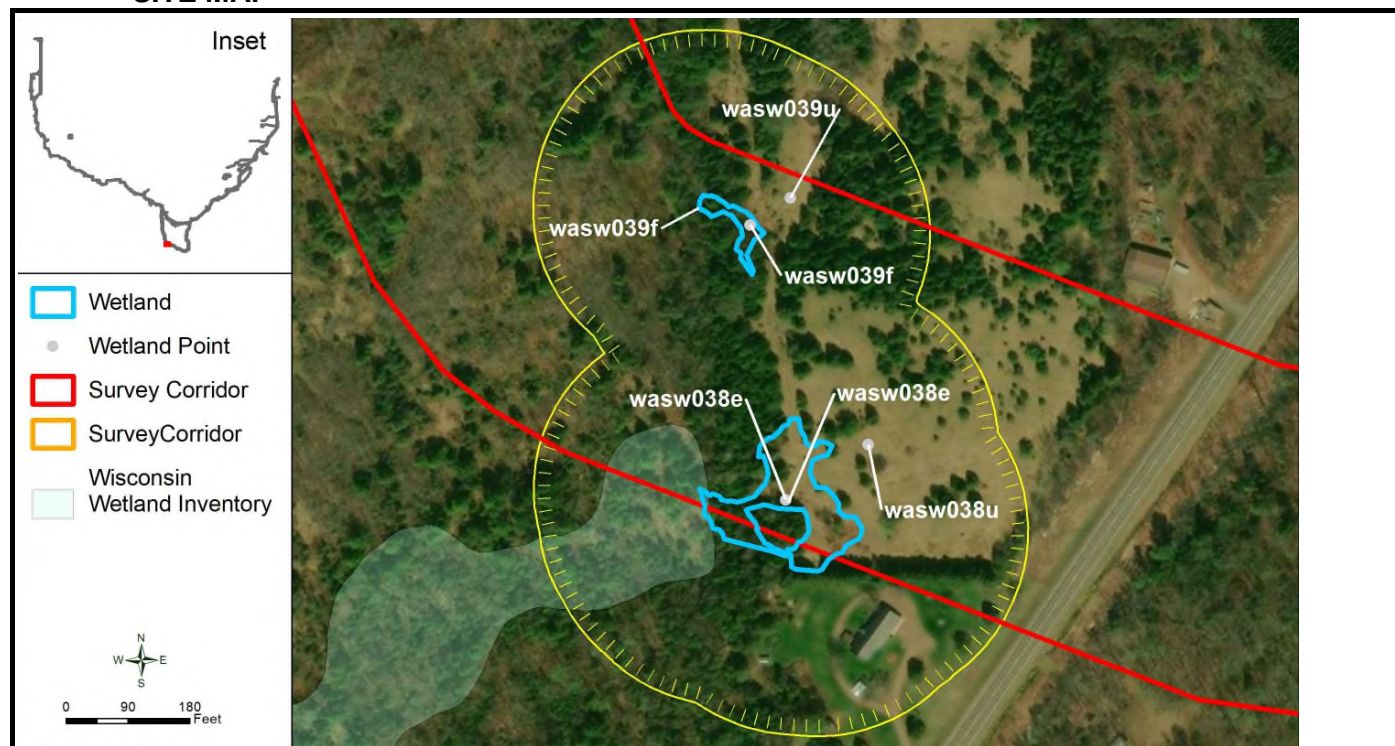
Photo File: **None.bmp** Orientation: -facing
Long/Easting: Lat/Northing:
Description:

Photo File: **None.bmp** Orientation: -facing
Long/Easting: Lat/Northing:
Description:

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION wasw038e, wasw039f	
Project name: Line 5 Relocation Project	Evaluator(s): Emily Stulik and Wes Conway
File #:	Date of visit(s): 10/10/2019
Location: PLSS: WI46 T44N R2W SN7	Ecological Landscape: North Central Forest
Lat: 46.31003138 (wasw038e) 46.31113428 (wasw039f) Long: -90.67345385 -90.67361266	Watershed: Upper bad river 0401030203
County: Ashland Town/City/Village: Mellen	
SITE DESCRIPTION	
Soils: Mapped Type(s): Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony (038e), Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony (039f) Field Verified: Yes	WWI Class: None (038e), None (039f) Wetland Type(s): 038e sedge meadow 039f forested Wetland Size: 0.10 Wetland Area Impacted Vegetation: Plant Community Description(s): Picea glauca, Abies balsamea, Populus tremuloides, Salix petiolaris, Hypericum perforatum, Scirpus cyperinus (038e), Tsuga canadensis, Betula alleghaniensis, Abies balsamea, Ostrya virginiana, Dryopteris intermedia, Carex crinita (039f)
Hydrology: Groundwater processes, geomorphic and topographic processes. High water table and drainage patterns observed	

SITE MAP



SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1		P	Used for recreation (hunting, birding, hiking, etc.). List: located on private parcels, may be used for private hunting/recreation
2	N		Used for educational or scientific purposes
3	Y		Visually or physically accessible to public
4	N		Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N		In or adjacent to RED FLAG areas List:
6	N		Supports or provides habitat for endangered, threatened or special concern species
7		P	In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y		Wetland and contiguous habitat >10 acres
2	Y		3 or more strata present (>10% cover)
3	N		Within or adjacent to habitat corridor or established wildlife habitat area
4	N		100 m buffer – natural land cover >50%(south) 75% (north) intact
5	N		Occurs in a Joint Venture priority township
6	Y		Interspersion of habitat structure (hemi-marsh,shrub/emergent, wetland/upland complex,etc.)
7	Y		Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y		Part of a large habitat block that supports area sensitive species
9	N		Ephemeral pond with water present > 45 days
10	N		Standing water provides habitat for amphibians and aquatic invertebrates
11	N		Seasonally exposed mudflats present
12	N		Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N		Wetland is connected or contiguous with perennial stream or lake
2	N		Standing water provides habitat for amphibians and aquatic invertebrates
3	N		Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N		Vegetation is inundated in spring
SP			Shoreline Protection
1	N/A		Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N/A		Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y		Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y		Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y		Water flow through wetland is NOT channelized
3	Y		Dense, persistent vegetation
4	Y		Evidence of flashy hydrology
5	N		Point or non-point source inflow
6	N		Impervious surfaces cover >10% of land surface within the watershed
7	N		Within a watershed with ≤10% wetland
8			Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N		Provides substantial storage of storm and floodwater based on previous section
2	Y		Basin wetland <u>or</u> constricted outlet
3	Y		Water flow through wetland is NOT channelized
4	N		Vegetated wetland associated with a lake or stream
5	Y		Dense, persistent vegetation
6	N		Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N		Stormwater or surface water from agricultural land is major hydrology source
8	N		Discharge to surface water
9	N		Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y		Springs, seeps or indicators of groundwater present
2	N		Location near a groundwater divide or a headwater wetland
3	Y		Wetland remains saturated for an extended time period with no additional water inputs
4	N		Wetland soils are organic
5	N		Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH 4: state rd 13 located within 100m buffer of wetlands
WH 6, 7, 8: wetland located within forested blocs. Potential to provide nesting bird habitat, large mammal habitat. Wetlands surrounded by upland habitat.
ST 1, 4: wetlands are located in toe of slope or on sloping hillsides adjacent to swales. Geomorphic position and drainage patterns observed
GW 1,3: water table and saturation observed. Hydrology not linked to stream

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)* wasw038e = yellow; wasw039f = green

	Low	Medium	High	Exceptional
Invasive species cover	> 50%	20-50%	10-20% wasw038e	<10% wasw039f
Strata	Missing stratum(a) or bare due to invasive species	All strata present but reduced native species	All strata present and good assemblage of native species	All strata present, conservative species represented wasw039f
NHI plant community ranking	S4 wasw038e	S3 wasw039f	S2	S1-S2 (S2 high quality)
Relative frequency of plant community in watershed	Abundant	Common both	Uncommon	Rare
FQI (optional)	<13	13-23 wasw038e	23-32 wasw039f	>32
Mean C (optional)	<2.4	2.4-4.2 wasw038e	4.3-4.7	>4.7 wasw039f

***Note: separate plant communities are described independently**

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Abies balsamea*	balsam fir	5	wasw038e; wasw039f	60%
Acer rubrum	red maple	3	wasw039f	15%
Acer saccharum	hard maple, sugar maple	5	wasw039f	12%
Amelanchier sanguinea	New England serviceberry, round-leaved serviceberry	7	wasw038e	12%
Betula alleghaniensis*	yellow birch	7	wasw039f	35%
Carex crinita*	fringed sedge	6	wasw039f	20%
Dryopteris intermedia*	fancy wood fern, glandular wood fern, intermediate	7	wasw039f	50%
Epilobium ciliatum	American willow-herb, hairy willow-herb	3	wasw038e	3%
Glyceria striata	fowl manna grass, fowl meadow grass	4	wasw038e	2%
Hypericum perforatum*	common St. John's-wort, Klamath-weed, St. John's-wort	0	wasw038e	25%
Juncus effusus	common rush, soft rush	4	wasw038e	15%
Juniperus virginiana	eastern red-cedar	3	wasw038e	10%
Ostrya virginiana*	eastern hop-hornbeam, ironwood	5	wasw039f	5%
Persicaria sagittata	arrow-leaved tearthumb, arrow vine	6	wasw038e	2%
Phalaris arundinacea	reed canary grass	0	wasw039f	5%
Picea glauca*	white spruce	7	wasw038e	12%
Populus tremuloides*	aspen, quaking aspen	2	wasw038e	18%
Rubus pubescens	dwarf red raspberry	7	wasw039f	7%
Salix bebbiana	beaked willow, Bebb's willow	7	wasw038e	12%
Salix petiolaris*	meadow willow	6	wasw038e; wasw039f	22%
Scirpus cyperinus*	wool-grass	4	wasw038e	50%
Solidago gigantea	giant goldenrod	3	wasw039f	5%
Symphyotrichum puniceum	swamp aster	5	wasw038e	2%
Tsuga canadensis*	eastern hemlock, hemlock, northern hemlock	8	wasw039f	25%

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

dominant plants in each strata of 039f with conservative c values. 039e dominated by invasive Hypericum

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
x	x		L	C	Roads or railroad
x	x		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
x	x		M	UC	Cover of non-native and/or invasive species
					Residential land use
x	x		L	C	Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

wetland located 100 m from state rd
wetland located within electric utility corridor
non native hypericum observed, dominant and spreading in emergent wetland

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		x			
Human Use Values	x				
Wildlife Habitat		x			
Fish and Aquatic Life Habitat	x				
Shoreline Protection					x
Flood and Stormwater Storage		x			
Water Quality Protection		x			
Groundwater Processes		x			

FUNCTION	RATIONALE
Floristic Integrity	conservative species in forested wetland, invasive species in emergent wetland
Human Use Values	private property, adjacent to house
Wildlife Habitat	not associated with stream, no standing water. Contiguous with large forested tracts
Fish and Aquatic Life Habitat	No habitat or species observed
Shoreline Protection	N/A
Flood and Stormwater Storage	wetlands located at toe of slope and on slope, basin wetlands
Water Quality Protection	basin wetland, dense persistent emergent vegetation
Groundwater Processes	some evidence of groundwater processes

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling. Tree removal	medium
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation and tree removal for construction.	medium
Cumulative Impacts	Operational vegetation maintenance	low
Spatial/Habitat Integrity	Temporary construction impacts	low
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project **City/County:** Ashland **Sampling Date:** 10-Oct-19
Applicant/Owner: Enbridge **State:** WI **Sampling Point:** wasw039u
Investigator(s): ES/WC **Section, Township, Range:** S. 7 T. 44N R. 2W
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** rolling **Slope:** 0.0 % / 0.0
Subregion (LRR or MLRA): LRR K **Lat.:** 46.31123841 **Long.:** -90.67337718 **Datum:** WGS 1984
Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: (Explain alternative procedures here or in a separate report.)	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (minimum of 2 required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Dominant Species?				Sampling Point: <u>wasw039u</u>	
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. <u><i>Juniperus virginiana</i></u>	15	<input checked="" type="checkbox"/> 60.0%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. <u><i>Abies balsamea</i></u>	10	<input checked="" type="checkbox"/> 40.0%	FAC	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%			
5. _____	0	<input type="checkbox"/> 0.0%			
6. _____	0	<input type="checkbox"/> 0.0%			
7. _____	0	<input type="checkbox"/> 0.0%			
Sapling/Shrub Stratum (Plot size: <u>15'</u>)			25 = Total Cover	Prevalence Index worksheet:	
1. <u><i>Prunus serotina</i></u>	20	<input checked="" type="checkbox"/> 80.0%	FACU	Total % Cover of: <u>0</u> Multiply by: <u>1</u> = <u>0</u>	
2. <u><i>Lonicera canadensis</i></u>	5	<input checked="" type="checkbox"/> 20.0%	FACU	OBL species <u>0</u> x <u>1</u> = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>15</u> x <u>2</u> = <u>30</u>	
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>10</u> x <u>3</u> = <u>30</u>	
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>145</u> x <u>4</u> = <u>580</u>	
6. _____	0	<input type="checkbox"/> 0.0%		UPL species <u>0</u> x <u>5</u> = <u>0</u>	
7. _____	0	<input type="checkbox"/> 0.0%		Column Totals: <u>170</u> (A) <u>640</u> (B)	
Herb Stratum (Plot size: <u>5'</u>)			25 = Total Cover	Prevalence Index = B/A = <u>3.765</u>	
1. <u><i>Solidago altissima</i></u>	5	<input type="checkbox"/> 4.2%	FACU	Hydrophytic Vegetation Indicators:	
2. <u><i>Lonicera canadensis</i></u>	0	<input type="checkbox"/> 0.0%	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
3. <u><i>Poa pratensis</i></u>	100	<input checked="" type="checkbox"/> 83.3%	FACU	<input type="checkbox"/> Dominance Test is > 50%	
4. <u><i>Solidago gigantea</i></u>	15	<input type="checkbox"/> 12.5%	FACW	<input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹	
5. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	0	<input type="checkbox"/> 0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	0	<input type="checkbox"/> 0.0%		Definitions of Vegetation Strata:	
9. _____	0	<input type="checkbox"/> 0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
10. _____	0	<input type="checkbox"/> 0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.	
11. _____	0	<input type="checkbox"/> 0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
12. _____	0	<input type="checkbox"/> 0.0%		Woody vine - All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot size: <u>15'</u>)			120 = Total Cover		
1. _____	0	<input type="checkbox"/> 0.0%			
2. _____	0	<input type="checkbox"/> 0.0%			
3. _____	0	<input type="checkbox"/> 0.0%			
4. _____	0	<input type="checkbox"/> 0.0%			
			0 = Total Cover		
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: (Include photo numbers here or on a separate sheet.)					

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FW

Sampling Point: wasw039u

Northcentral and Northeast Region - Version 2.0

Plot ID: **wasw039u**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: **DSCN8050.JPG**

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: **DSCN8051.JPG**

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

Plot ID: **wasw039u**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Pho



No Photo

Photo File: **DSCN8052.JP** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

No Photo

No Photo

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: was141f_w
 Investigator(s): BRG/DGL Section, Township, Range: 044N-003W-12
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.310381 Long: -90.674424 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a hardwood swamp dominated by <i>Fraxinus nigra</i> , and has been disturbed by past logging.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The hydrologic regime is seasonally saturated, with recharge hydrology. The wetland is a closed depression in which small pools of standing water are present.		

VEGETATION – Use scientific names of plants.

 Sampling Point: was141f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>40.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>13</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>69.23</u> (A/B)														
2. <u>Betula alleghaniensis</u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
3. <u>Acer rubrum</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
4. <u>Abies balsamea</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Thuja occidentalis</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
6. <u>Tsuga canadensis</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
7. _____	_____	_____	_____															
<u>70.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>57</u></td> <td>x 2 = <u>114</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>147</u> (A)</td> <td><u>374</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.54</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>57</u>	x 2 = <u>114</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>147</u> (A)	<u>374</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>57</u>	x 2 = <u>114</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>147</u> (A)	<u>374</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Abies balsamea</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Juncus effusus</u>	<u>10.0</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Bromus ciliatus</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Carex gracillima</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Dryopteris intermedia</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
5. <u>Epigaea repens</u>	<u>5.0</u>	<u>Y</u>	<u>NI</u>															
6. <u>Glyceria striata</u>	<u>5.0</u>	<u>Y</u>	<u>OBL</u>															
7. <u>Prunella vulgaris</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
8. <u>Verbena hastata</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
9. <u>Fragaria virginiana</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
10. <u>Symphotrichum lateriflorum</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
11. <u>Brachyelytrum erectum</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
12. <u>Rubus pubescens</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
<u>62</u> = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The wetland is dominated by a canopy of Fraxinus nigra, with disturbed herbaceous vegetation. Fraxinus nigra and Abies balsamea seedlings are present in the herbaceous layer.																		

SOIL

Sampling Point: wasa141f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Dark clay loam over red clay with redox throughout the profile.



wasal41f_w_E



wasal41f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): KDF/DGL/BRG	
File #: wasa141		Date of visit(s): 10/17/2019	
Location: PLSS: <u>044N-003W-12, 044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.310387</u> Long: <u>-90.674434</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C Gogebic, very stony-Pence, very stony-Cathro complex, 809C Gogebic-Metonga-Rock outcrop complex, Field Verified: Series not verified. The soils consist of a clay loam over a clay.		WWI Class: T3/5K Wetland Type(s): PFO - Hardwood swamp	
		Wetland Size: 0.51	Wetland Area Impacted 0.51
Hydrology: The hydrologic regime is seasonally saturated with recharge hydrology. Shallow pockets of standing water are present within the wetland.		Vegetation: Plant Community Description(s): The canopy is dominated by Fraxinus nigra. The dominate shrub vegetation is Abies balsamea. The dominant herbaceous vegetation is variable, and includes Carex bromoides and Glyceria striata.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	N	N	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	N	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-1: deer stand located nearby
HU-4: disturbed area
WH-10: shallow standing water is present within wetland

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Avians, Herpetofauna, mammals, insects
Y	Y	Chickadee

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The vegetation is comprised of native species expected within the plant community.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
	X		M	U	Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		M	U	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	H	C	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
	X		M	U	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland and surrounding area is influenced by earthworm activity and proximity to a paved roadway within the wetland buffer.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values		✓			
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Native vegetation, no invasive species
Human Use Values	Potentially used for hunting purposes
Wildlife Habitat	Multiple strata represented, some shallow standing water present, part of larger forested habitat block
Fish and Aquatic Life Habitat	Standing water with potential to support aquatic invertebrates but not fish
Shoreline Protection	N/A
Flood and Stormwater Storage	Closed basin, moderately vegetated
Water Quality Protection	See above
Groundwater Processes	Recharge hydrology

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: was141_u
 Investigator(s): BRG/DGL Section, Township, Range: 044N-003W-12
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.310565 Long: -90.674447 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland is located on a small hill in a disturbed young forest that has been logged in the past.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) ___ Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasal41_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer rubrum</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>45.45</u> (A/B)														
2. <u>Acer saccharum</u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Tilia americana</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>25.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>41</u></td> <td>x 3 = <u>123</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>126</u> (A)</td> <td><u>453</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.60</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>41</u>	x 3 = <u>123</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>126</u> (A)	<u>453</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>41</u>	x 3 = <u>123</u>																	
FACU species <u>80</u>	x 4 = <u>320</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>126</u> (A)	<u>453</u> (B)																	
<u>65</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Corylus cornuta</u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Abies balsamea</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Quercus rubra</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
4. <u>Acer saccharum</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
5. <u>Prunus serotina</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>65</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Pyrola elliptica</u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. <u>Thuja occidentalis</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Brachyelytrum erectum</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Carex pedunculata</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
5. <u>Prunus serotina</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
6. <u>Abies balsamea</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
7. <u>Acer rubrum</u>	<u>1.0</u>	<u>N</u>	<u>FAC</u>															
<u>36</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Young mesic hardwood forest.																		

SOIL

Sampling Point: wasa141_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators observed.



wasal41_u_E



wasal41_u_W

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project **City/County:** Ashland **Sampling Date:** 09-Oct-19
Applicant/Owner: Enbridge **State:** WI **Sampling Point:** wasw038e
Investigator(s): ES/WC **Section, Township, Range:** S. 7 T. 44N R. 2W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 21.2 % / 12.0
Subregion (LRR or MLRA): LRR K **Lat.:** 46.31003138 **Long.:** -90.67345385 **Datum:** WGS 1984
Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ , **Soil** ☐ , **or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: (Explain alternative procedures here or in a separate report.) Wetland classified as emergent due to dominance of herbaceous plant community in stratum. Datapoint includes overhanging canopy cover from conifer forest outside of the wetland boundary.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of 2 required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 2 Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 9 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Dominant Species?				Sampling Point: <u>wasw038e</u>	
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. <u>Picea glauca</u>	<u>12</u>	<input checked="" type="checkbox"/> 21.1%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)	
2. <u>Abies balsamea</u>	<u>25</u>	<input checked="" type="checkbox"/> 43.9%	FAC	Total Number of Dominant Species Across All Strata: <u>7</u> (B)	
3. <u>Populus tremuloides</u>	<u>15</u>	<input checked="" type="checkbox"/> 26.3%	FACU	Percent of dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)	
4. <u>Juniperus virginiana</u>	<u>5</u>	<input type="checkbox"/> 8.8%	FACU		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
			<u>57</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:	
1. <u>Populus tremuloides</u>	<u>3</u>	<input type="checkbox"/> 4.2%	FACU	Total % Cover of: <u>71</u> Multiply by: <u>1</u> = <u>71</u>	
2. <u>Salix bebbiana</u>	<u>12</u>	<input type="checkbox"/> 16.7%	FACW	OBL species <u>71</u> x 1 = <u>71</u>	
3. <u>Salix petiolaris</u>	<u>20</u>	<input checked="" type="checkbox"/> 27.8%	FACW	FACW species <u>35</u> x 2 = <u>70</u>	
4. <u>Juniperus virginiana</u>	<u>5</u>	<input type="checkbox"/> 6.9%	FACU	FAC species <u>45</u> x 3 = <u>135</u>	
5. <u>Abies balsamea</u>	<u>20</u>	<input checked="" type="checkbox"/> 27.8%	FAC	FACU species <u>40</u> x 4 = <u>160</u>	
6. <u>Amelanchier sanguinea</u>	<u>12</u>	<input type="checkbox"/> 16.7%	UPL	UPL species <u>37</u> x 5 = <u>185</u>	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Column Totals: <u>228</u> (A) <u>621</u> (B)	
			<u>72</u> = Total Cover	Prevalence Index = B/A = <u>2.724</u>	
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators:	
1. <u>Hypericum perforatum</u>	<u>25</u>	<input checked="" type="checkbox"/> 25.3%	UPL	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <u>Persicaria sagittata</u>	<u>2</u>	<input type="checkbox"/> 2.0%	OBL	<input checked="" type="checkbox"/> Dominance Test is > 50%	
3. <u>Scirpus cyperinus</u>	<u>50</u>	<input checked="" type="checkbox"/> 50.5%	OBL	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹	
4. <u>Juncus effusus</u>	<u>15</u>	<input type="checkbox"/> 15.2%	OBL	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Glyceria striata</u>	<u>2</u>	<input type="checkbox"/> 2.0%	OBL	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6. <u>Symphyotrichum puniceum</u>	<u>2</u>	<input type="checkbox"/> 2.0%	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. <u>Epilobium ciliatum</u>	<u>3</u>	<input type="checkbox"/> 3.0%	FACW		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Definitions of Vegetation Strata:	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
12. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Woody vine - All woody vines greater than 3.28 ft in height.	
			<u>99</u> = Total Cover		
Woody Vine Stratum (Plot size: <u>15'</u>)					
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
			<u>0</u> = Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS

Sampling Point: wasw038e

US Army Corps of Engineers

Plot ID: **wasw038e**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: **DSCN8038.JPG**

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: **DSCN8040.JPG**

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

Plot ID: **wasw038e**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Pho



No Photo

Photo File: **DSCN8039.JPG** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

No Photo

No Photo

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

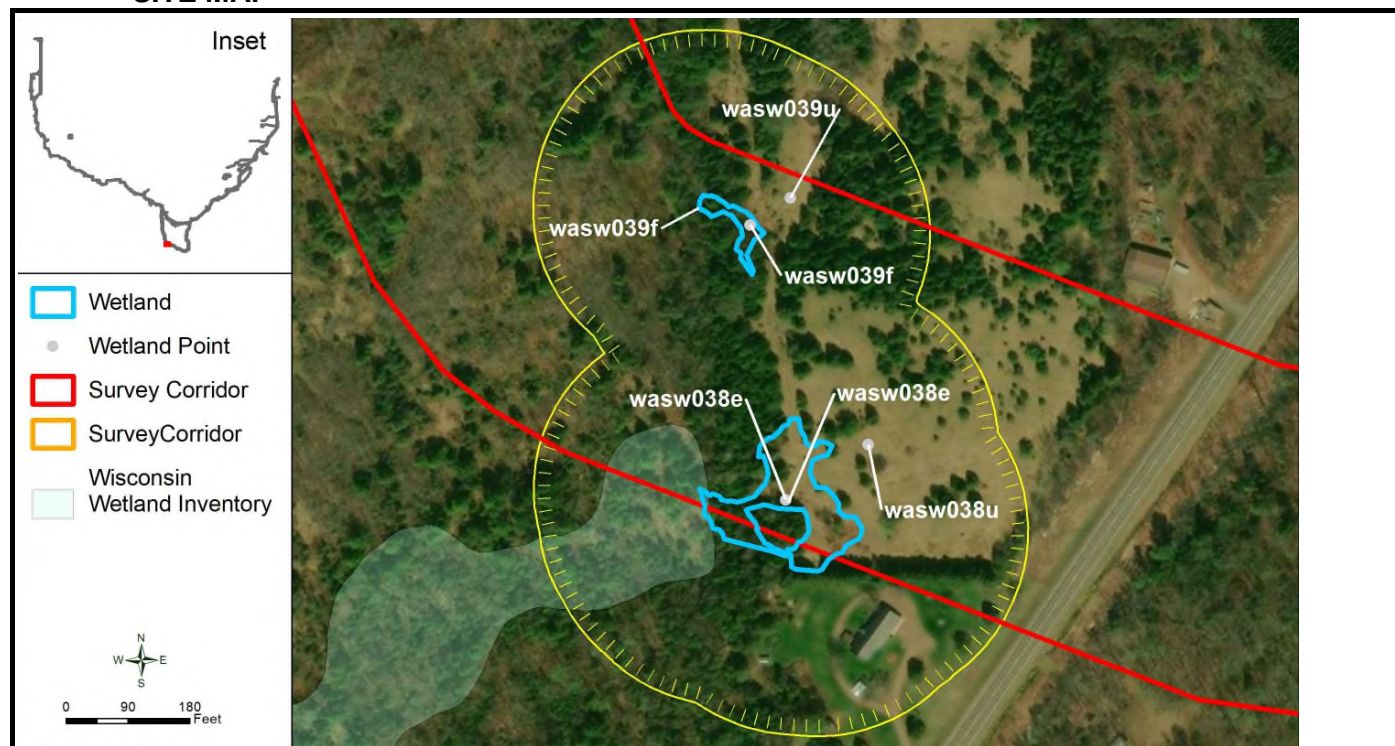
Long/Easting: Lat/Northing:

Description:

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION wasw038e, wasw039f	
Project name: Line 5 Relocation Project	Evaluator(s): Emily Stulik and Wes Conway
File #:	Date of visit(s): 10/10/2019
Location: PLSS: WI46 T44N R2W SN7	Ecological Landscape: North Central Forest
Lat: 46.31003138 (wasw038e) 46.31113428 (wasw039f) Long: -90.67345385 -90.67361266	Watershed: Upper bad river 0401030203
County: Ashland Town/City/Village: Mellen	
SITE DESCRIPTION	
Soils: Mapped Type(s): Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony (038e), Gogebic-Metonga-Rock outcrop complex, 10 to 35 percent slopes, very stony (039f) Field Verified: Yes	WWI Class: None (038e), None (039f) Wetland Type(s): 038e sedge meadow 039f forested Wetland Size: 0.10 Wetland Area Impacted Vegetation: Plant Community Description(s): Picea glauca, Abies balsamea, Populus tremuloides, Salix petiolaris, Hypericum perforatum, Scirpus cyperinus (038e), Tsuga canadensis, Betula alleghaniensis, Abies balsamea, Ostrya virginiana, Dryopteris intermedia, Carex crinita (039f)
Hydrology: Groundwater processes, geomorphic and topographic processes. High water table and drainage patterns observed	

SITE MAP



SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1		P	Used for recreation (hunting, birding, hiking, etc.). List: located on private parcels, may be used for private hunting/recreation
2	N		Used for educational or scientific purposes
3	Y		Visually or physically accessible to public
4	N		Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N		In or adjacent to RED FLAG areas List:
6	N		Supports or provides habitat for endangered, threatened or special concern species
7		P	In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y		Wetland and contiguous habitat >10 acres
2	Y		3 or more strata present (>10% cover)
3	N		Within or adjacent to habitat corridor or established wildlife habitat area
4	N		100 m buffer – natural land cover >50%(south) 75% (north) intact
5	N		Occurs in a Joint Venture priority township
6	Y		Interspersion of habitat structure (hemi-marsh,shrub/emergent, wetland/upland complex,etc.)
7	Y		Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y		Part of a large habitat block that supports area sensitive species
9	N		Ephemeral pond with water present > 45 days
10	N		Standing water provides habitat for amphibians and aquatic invertebrates
11	N		Seasonally exposed mudflats present
12	N		Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N		Wetland is connected or contiguous with perennial stream or lake
2	N		Standing water provides habitat for amphibians and aquatic invertebrates
3	N		Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N		Vegetation is inundated in spring
SP			Shoreline Protection
1	N/A		Along shoreline of a stream, lake, pond or open water area (>1 acre) - if no, not applicable
2	N/A		Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y		Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y		Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y		Water flow through wetland is NOT channelized
3	Y		Dense, persistent vegetation
4	Y		Evidence of flashy hydrology
5	N		Point or non-point source inflow
6	N		Impervious surfaces cover >10% of land surface within the watershed
7	N		Within a watershed with ≤10% wetland
8			Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N		Provides substantial storage of storm and floodwater based on previous section
2	Y		Basin wetland <u>or</u> constricted outlet
3	Y		Water flow through wetland is NOT channelized
4	N		Vegetated wetland associated with a lake or stream
5	Y		Dense, persistent vegetation
6	N		Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N		Stormwater or surface water from agricultural land is major hydrology source
8	N		Discharge to surface water
9	N		Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y		Springs, seeps or indicators of groundwater present
2	N		Location near a groundwater divide or a headwater wetland
3	Y		Wetland remains saturated for an extended time period with no additional water inputs
4	N		Wetland soils are organic
5	N		Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH 4: state rd 13 located within 100m buffer of wetlands
WH 6, 7, 8: wetland located within forested blocs. Potential to provide nesting bird habitat, large mammal habitat. Wetlands surrounded by upland habitat.
ST 1, 4: wetlands are located in toe of slope or on sloping hillsides adjacent to swales. Geomorphic position and drainage patterns observed
GW 1,3: water table and saturation observed. Hydrology not linked to stream

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)* wasw038e = yellow; wasw039f = green

	Low	Medium	High	Exceptional
Invasive species cover	> 50%	20-50%	10-20% wasw038e	<10% wasw039f
Strata	Missing stratum(a) or bare due to invasive species	All strata present but reduced native species	All strata present and good assemblage of native species	All strata present, conservative species represented wasw039f
NHI plant community ranking	S4 wasw038e	S3 wasw039f	S2	S1-S2 (S2 high quality)
Relative frequency of plant community in watershed	Abundant	Common both	Uncommon	Rare
FQI (optional)	<13	13-23 wasw038e	23-32 wasw039f	>32
Mean C (optional)	<2.4	2.4-4.2 wasw038e	4.3-4.7	>4.7 wasw039f

***Note: separate plant communities are described independently**

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Abies balsamea*	balsam fir	5	wasw038e; wasw039f	60%
Acer rubrum	red maple	3	wasw039f	15%
Acer saccharum	hard maple, sugar maple	5	wasw039f	12%
Amelanchier sanguinea	New England serviceberry, round-leaved serviceberry	7	wasw038e	12%
Betula alleghaniensis*	yellow birch	7	wasw039f	35%
Carex crinita*	fringed sedge	6	wasw039f	20%
Dryopteris intermedia*	fancy wood fern, glandular wood fern, intermediate	7	wasw039f	50%
Epilobium ciliatum	American willow-herb, hairy willow-herb	3	wasw038e	3%
Glyceria striata	fowl manna grass, fowl meadow grass	4	wasw038e	2%
Hypericum perforatum*	common St. John's-wort, Klamath-weed, St. John's-wort	0	wasw038e	25%
Juncus effusus	common rush, soft rush	4	wasw038e	15%
Juniperus virginiana	eastern red-cedar	3	wasw038e	10%
Ostrya virginiana*	eastern hop-hornbeam, ironwood	5	wasw039f	5%
Persicaria sagittata	arrow-leaved tearthumb, arrow vine	6	wasw038e	2%
Phalaris arundinacea	reed canary grass	0	wasw039f	5%
Picea glauca*	white spruce	7	wasw038e	12%
Populus tremuloides*	aspen, quaking aspen	2	wasw038e	18%
Rubus pubescens	dwarf red raspberry	7	wasw039f	7%
Salix bebbiana	beaked willow, Bebb's willow	7	wasw038e	12%
Salix petiolaris*	meadow willow	6	wasw038e; wasw039f	22%
Scirpus cyperinus*	wool-grass	4	wasw038e	50%
Solidago gigantea	giant goldenrod	3	wasw039f	5%
Symphyotrichum puniceum	swamp aster	5	wasw038e	2%
Tsuga canadensis*	eastern hemlock, hemlock, northern hemlock	8	wasw039f	25%

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

dominant plants in each strata of 039f with conservative c values. 039e dominated by invasive Hypericum

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
x	x		L	C	Roads or railroad
x	x		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
x	x		M	UC	Cover of non-native and/or invasive species
					Residential land use
x	x		L	C	Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

wetland located 100 m from state rd
wetland located within electric utility corridor
non native hypericum observed, dominant and spreading in emergent wetland

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		x			
Human Use Values	x				
Wildlife Habitat		x			
Fish and Aquatic Life Habitat	x				
Shoreline Protection					x
Flood and Stormwater Storage		x			
Water Quality Protection		x			
Groundwater Processes		x			

FUNCTION	RATIONALE
Floristic Integrity	conservative species in forested wetland, invasive species in emergent wetland
Human Use Values	private property, adjacent to house
Wildlife Habitat	not associated with stream, no standing water. Contiguous with large forested tracts
Fish and Aquatic Life Habitat	No habitat or species observed
Shoreline Protection	N/A
Flood and Stormwater Storage	wetlands located at toe of slope and on slope, basin wetlands
Water Quality Protection	basin wetland, dense persistent emergent vegetation
Groundwater Processes	some evidence of groundwater processes

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling. Tree removal	medium
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation and tree removal for construction.	medium
Cumulative Impacts	Operational vegetation maintenance	low
Spatial/Habitat Integrity	Temporary construction impacts	low
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project **City/County:** Ashland **Sampling Date:** 09-Oct-19
Applicant/Owner: Enbridge **State:** WI **Sampling Point:** wasw038u
Investigator(s): ES/WC **Section, Township, Range:** S. 7 T. 44N R. 2W
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** undulating **Slope:** 17.6 % / 10.0
Subregion (LRR or MLRA): LRR K **Lat.:** 46.31024406 **Long.:** -90.67297039 **Datum:** WGS 1984
Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony **NWI classification:** None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: (Explain alternative procedures here or in a separate report.) 	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of 2 required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: 		

VEGETATION - Use scientific names of plants

Dominant Species?				Sampling Point: <u>wasw038u</u>	
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. <u>Picea glauca</u>	<u>10</u>	<input checked="" type="checkbox"/> 20.8%	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. <u>Pinus strobus</u>	<u>15</u>	<input checked="" type="checkbox"/> 31.3%	FACU	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3. <u>Prunus serotina</u>	<u>3</u>	<input type="checkbox"/> 6.3%	FACU	Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
4. <u>Juniperus virginiana</u>	<u>20</u>	<input checked="" type="checkbox"/> 41.7%	FACU		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
			<u>48</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:	
				Total % Cover of: _____ Multiply by: _____	
1. <u>Alnus incana</u>	<u>10</u>	<input checked="" type="checkbox"/> 66.7%	FACW	OBL species <u>0</u>	x 1 = <u>0</u>
2. <u>Rhamnus cathartica</u>	<u>5</u>	<input checked="" type="checkbox"/> 33.3%	FAC	FACW species <u>10</u>	x 2 = <u>20</u>
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		FAC species <u>5</u>	x 3 = <u>15</u>
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		FACU species <u>175</u>	x 4 = <u>700</u>
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Column Totals: <u>190</u> (A)	<u>735</u> (B)
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Prevalence Index = B/A = <u>3.868</u>	
			<u>15</u> = Total Cover	Hydrophytic Vegetation Indicators:	
Herb Stratum (Plot size: <u>5'</u>)				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
1. <u>Solidago altissima</u>	<u>20</u>	<input type="checkbox"/> 15.7%	FACU	<input type="checkbox"/> Dominance Test is > 50%	
2. <u>Rubus idaeus</u>	<u>5</u>	<input type="checkbox"/> 3.9%	FACU	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹	
3. <u>Cirsium arvense</u>	<u>2</u>	<input type="checkbox"/> 1.6%	FACU	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Poa pratensis</u>	<u>100</u>	<input checked="" type="checkbox"/> 78.7%	FACU	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Definitions of Vegetation Strata:	
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Woody vine - All woody vines greater than 3.28 ft in height.	
11. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
12. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
			<u>127</u> = Total Cover		
Woody Vine Stratum (Plot size: <u>15'</u>)				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%			
			<u>0</u> = Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)					

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FW

Sampling Point: wasw038u

Northcentral and Northeast Region - Version 2.0

Plot ID: **wasw038u**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: **DSCN8026.JPG**

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: **DSCN8027.JPG**

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc049e_w
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309725 Long: -90.671469 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a fresh wet meadow located along a paved road. The feature is artificial and only exists due to conditions created by road construction.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) _____ Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) _____ Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) _____ Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.1</u> Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The hydrologic regime is seasonally saturated, with recharge hydrology. Stormwater runoff from the adjacent road is collected in the wetland. Rain events occurred prior to the time of survey.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc049e_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>3.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>0.0</u> = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>68.0</u></td> <td>x 1 = <u>68.0</u></td> </tr> <tr> <td>FACW species <u>27.0</u></td> <td>x 2 = <u>54.0</u></td> </tr> <tr> <td>FAC species <u>0.0</u></td> <td>x 3 = <u>0.0</u></td> </tr> <tr> <td>FACU species <u>0.0</u></td> <td>x 4 = <u>0.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>95.0</u> (A)</td> <td><u>122.0</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.3</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>68.0</u>	x 1 = <u>68.0</u>	FACW species <u>27.0</u>	x 2 = <u>54.0</u>	FAC species <u>0.0</u>	x 3 = <u>0.0</u>	FACU species <u>0.0</u>	x 4 = <u>0.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>95.0</u> (A)	<u>122.0</u> (B)	Prevalence Index = B/A = <u>1.3</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>68.0</u>	x 1 = <u>68.0</u>																			
FACW species <u>27.0</u>	x 2 = <u>54.0</u>																			
FAC species <u>0.0</u>	x 3 = <u>0.0</u>																			
FACU species <u>0.0</u>	x 4 = <u>0.0</u>																			
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																			
Column Totals: <u>95.0</u> (A)	<u>122.0</u> (B)																			
Prevalence Index = B/A = <u>1.3</u>																				
		<u>0.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																				
1. <u>Scirpus cyperinus</u>	<u>40.0</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Phalaris arundinacea</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>																	
3. <u>Juncus effusus</u>	<u>10.0</u>	<u>Y</u>	<u>OBL</u>																	
4. <u>Typha X glauca</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>																	
5. <u>Symphyotrichum lanceolatum</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>																	
6. <u>Eutrochium maculatum</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>																	
7. <u>Doellingeria umbellata</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>																	
8. <u>Carex crinita</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>																	
9. <u>Onoclea sensibilis</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>																	
10. <u>Solidago gigantea</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>																	
11. <u>Galium asprellum</u>	<u>2.0</u>	<u>N</u>	<u>OBL</u>																	
12. <u>Symphyotrichum puniceum</u>	<u>1.0</u>	<u>N</u>	<u>OBL</u>																	
		<u>95.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>0.0</u> = Total Cover																		
Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation on the roadside edge of the wetland is occasionally mowed, and as such the wetland is entirely emergent and shrubs are cut short. The wetland has a disturbed plant community with significant invasive species cover.																				

SOIL

Sampling Point: wasc049e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soils could not be sampled due to the location within the roadside ditch. As such, soils are assumed to be hydric based on the landscape position and dominance of hydrophytic vegetation.



wasc049e_w_N



wasc049e_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): BRG/JSW	
File #: wasc049		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.309725</u> Long: <u>-90.671469</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 809C Gogebic-Metonga-Rock outcrop complex		WWI Class: N/A	
Field Verified: Series not verified. Soils were not sampled due to the wetland's location in a roadside ditch.		Wetland Type(s): PEM - Fresh wet meadow	
		Wetland Size: 0.27	Wetland Area Impacted 0.27
Hydrology: The hydrologic regime is seasonally saturated, with recharge hydrology. The wetland receives runoff from the adjacent paved road.		Vegetation: Plant Community Description(s): Fresh wet meadow dominated by Scirpus cyperinus and Typha X glauca. The wetland is filled with typical roadside ditch species that favor disturbed areas.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	N	N	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-4: the wetland is adjacent to a paved road
WH-7: dense cattail provides good habitat for songbird nesting, although the busy roadside position is not ideal
SP-1: associated with an intermittent stream
WQ-1: the wetland is of low floristic quality, but functions very well for storing stormwater runoff from the adjacent road

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Avian, as well as marginal mammal and amphibian habitat

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The wetland is of low floristic quality as a result of the prevalence of invasive species and the disturbance-favoring vegetation.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
X	X				Drainage – tiles, ditches
	X				Hydrologic changes - high capacity wells, impounded water, increased runoff
	X		H	C	Point source or stormwater discharge
	X		M	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		H	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		H	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
		X	M	U	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
X	X		H	C	Cover of non-native and/or invasive species
	X		M	C	Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is an artificial feature that is heavily disturbed and only exists due to the ditch hydrology and location next to a paved road. Logging has occurred in the adjacent forest in the recent past.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values	✓				
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat	✓				
Shoreline Protection			✓		
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Low species diversity and presence of invasive species
Human Use Values	Small size and no good uses, fast traffic on adjacent road
Wildlife Habitat	Adjacent to a busy paved road, but good habitat for Red-winged Blackbirds and other species that nest in cattails
Fish and Aquatic Life Habitat	Some marginal habitat when the wetland is more frequently inundated, but habitat is decreased by polluted runoff
Shoreline Protection	Densely vegetated wetland associated with an intermittent stream, functions as a buffer between road runoff and the stream
Flood and Stormwater Storage	Stores significant runoff from the paved road
Water Quality Protection	Filters polluted runoff water
Groundwater Processes	Groundwater recharge

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Low
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Low
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasco49_u
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309663 Long: -90.671289 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland sample point is located in a mesic forest, where some logging activity has occurred in the recent past. Vegetation is facultative due to the mesic environment, but no other wetland indicators were observed.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No primary indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasc049_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Quercus rubra</u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.67</u> (A/B)														
2. <u>Thuja occidentalis</u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Ulmus americana</u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u>Betula alleghaniensis</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Populus tremuloides</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>80.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>49</u></td> <td>x 3 = <u>147</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>144</u> (A)</td> <td><u>407</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.83</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>49</u>	x 3 = <u>147</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>144</u> (A)	<u>407</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>49</u>	x 3 = <u>147</u>																	
FACU species <u>35</u>	x 4 = <u>140</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>144</u> (A)	<u>407</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Thuja occidentalis</u>	<u>20.0</u>	<u>Y</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Dryopteris intermedia</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Brachyelytrum aristosum</u>	<u>10.0</u>	<u>Y</u>	<u>NI</u>															
3. <u>Athyrium angustum</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
4. <u>Carex gracillima</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
5. <u>Trientalis borealis</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
6. <u>Carex pedunculata</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
7. <u>Populus tremuloides</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>54</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The upland is a mesic forest dominated by Thuja occidentalis and Quercus rubra.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wasc049_u

[illegible]



wasc049_u_E



wasc049_u_N

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc050e_w
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Concave Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309352 Long: -90.670676 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a fresh wet meadow/hardwood swamp complex that exists due to groundwater seepage out of a hillside. The emergent component only exists in this state due to clearing for access to a small residential building, and otherwise would be a part of the same forested wetland plant community.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland is fed by a hillside seep, and discharges groundwater downslope and through associated stream sasc032i. The hydrologic regime is seasonally saturated.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc050e_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>3.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>27.0</u></td> <td>x 1 = <u>27.0</u></td> </tr> <tr> <td>FACW species <u>45.0</u></td> <td>x 2 = <u>90.0</u></td> </tr> <tr> <td>FAC species <u>10.0</u></td> <td>x 3 = <u>30.0</u></td> </tr> <tr> <td>FACU species <u>5.0</u></td> <td>x 4 = <u>20.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>87.0</u> (A)</td> <td><u>167.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.9</u>	Total % Cover of:	Multiply by:	OBL species <u>27.0</u>	x 1 = <u>27.0</u>	FACW species <u>45.0</u>	x 2 = <u>90.0</u>	FAC species <u>10.0</u>	x 3 = <u>30.0</u>	FACU species <u>5.0</u>	x 4 = <u>20.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>87.0</u> (A)	<u>167.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>27.0</u>	x 1 = <u>27.0</u>																	
FACW species <u>45.0</u>	x 2 = <u>90.0</u>																	
FAC species <u>10.0</u>	x 3 = <u>30.0</u>																	
FACU species <u>5.0</u>	x 4 = <u>20.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>87.0</u> (A)	<u>167.0</u> (B)																	
<u>0.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex bromoides</u>	<u>40.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Epilobium coloratum</u>	<u>10.0</u>	<u>Y</u>	<u>OBL</u>															
3. <u>Scutellaria lateriflora</u>	<u>10.0</u>	<u>Y</u>	<u>OBL</u>															
4. <u>Osmunda claytoniana</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Agrimonia striata</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. <u>Solidago gigantea</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
7. <u>Rumex obtusifolius</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
8. <u>Carex crinita</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>															
9. <u>Persicaria sagittata</u>	<u>2.0</u>	<u>N</u>	<u>OBL</u>															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>87.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The fresh wet meadow component is dominated by Carex bromoides.																		

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: wasc050e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: cobble

Depth (inches): 8

Hydric Soil Present? Yes ✓ No

Remarks:

Soils could not be dug deeper due to a restrictive cobble layer.



wasc050e_w_S



wasc050e_w_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc050f_w
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Concave Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309417 Long: -90.670830 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a hardwood swamp/fresh wet meadow complex caused by hillside seepage.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland is fed by a hillside seep, and stream sasc032i runs down the slope through the wetland. The hydrologic regime is seasonally saturated, with discharge hydrology.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasc050f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus pennsylvanica</u>	<u>30.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>72.73</u> (A/B)														
2. <u>Fraxinus nigra</u>	<u>20.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Betula alleghaniensis</u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
4. <u>Ulmus americana</u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
5. <u>Acer rubrum</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>75.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>135</u></td> <td>x 2 = <u>270</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>445</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.41</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>135</u>	x 2 = <u>270</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>445</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>135</u>	x 2 = <u>270</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>25</u>	x 4 = <u>100</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>185</u> (A)	<u>445</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Fraxinus nigra</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Tilia americana</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Corylus cornuta</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Acer saccharum</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
5. <u>Ulmus americana</u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex bromoides</u>	<u>40.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Athyrium angustum</u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Rubus pubescens</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Fraxinus nigra</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
5. <u>Carex gracillima</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
6. <u>Acer saccharum</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>80</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The hardwood swamp component is dominated by Fraxinus nigra and F. pennsylvanica, with an herbaceous layer dominated by Carex bromoides.																		

SOIL

Sampling Point: wasc050f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soils are saturated and mucky.



wasc050f_w_N



wasc050f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): BRG/JSW	
File #: wasc050	Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.30941</u> Long: <u>-90.670825</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 809C Gogebic-Metonga-Rock outcrop complex	WWI Class: N/A	
Field Verified: Series not verified. Soils were a mucky mineral throughout the profile.	Wetland Type(s): PFO/PEM complex - Hardwood swamp/Fresh wet meadow	
	Wetland Size: 0.16	Wetland Area Impacted 0.16
Hydrology: The hydrologic regime is seasonally saturated. The wetland is a hillside seep, and as such discharges groundwater into the wetland and downslope. An intermittent stream runs through the wetland.	Vegetation: Plant Community Description(s): The hardwood swamp is dominated by Fraxinus pennsylvanica, F. nigra, and Betula alleghaniensis, and the fresh wet meadow component is dominated by Carex bromoides. The emergent component only exists due to past clearing to access a small residential building.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	N	N	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

ST-1: an intermittent stream runs through the wetland, and water exits the wetland through this feature
GW-1: the wetland is fed by a hillside seep
GW-4: soils were a thick layer of mucky mineral

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Deer/mammals
	Y	Avian
	Y	Amphibians

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)*

	Low	Medium	High	Exceptional
Invasive species cover	> 50% <input type="checkbox"/>	20-50% <input type="checkbox"/>	10-20% <input type="checkbox"/>	<10% <input checked="" type="checkbox"/>
Strata	Missing stratum(a) <input type="checkbox"/> or bare due to invasive species	All strata present but reduced native species <input type="checkbox"/>	All strata present and good assemblage of native species <input checked="" type="checkbox"/>	All strata present, conservative species represented <input type="checkbox"/>
NHI plant community ranking	S4 <input type="checkbox"/>	S3 <input checked="" type="checkbox"/>	S2 <input type="checkbox"/>	S1-S2 (S2 high quality) <input type="checkbox"/>
Relative frequency of plant community in watershed	Abundant <input type="checkbox"/>	Common <input checked="" type="checkbox"/>	Uncommon <input type="checkbox"/>	Rare <input type="checkbox"/>
FQI (optional)	<13 <input type="checkbox"/>	13-23 <input type="checkbox"/>	23-32 <input type="checkbox"/>	>32 <input type="checkbox"/>
Mean C (optional)	<2.4 <input type="checkbox"/>	2.4-4.2 <input type="checkbox"/>	4.3-4.7 <input type="checkbox"/>	>4.7 <input type="checkbox"/>

*Note: separate plant communities are described independently

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Fraxinus pennsylvanica			PFO	Common
Fraxinus nigra			PFO	Common
Betula alleghaniensis			PFO	Common
Ulmus americana			PFO	Common
Acer rubrum			PFO	Uncommon
Tilia americana			PFO	Uncommon
Corylus cornuta			PFO	Uncommon
Acer saccharum			PFO	Common
Carex bromoides			PFO, PEM	Abundant
Athyrium angustum			PFO	Common
Rubus pubescens			PFO	Common
Carex gracillima			PFO	Uncommon
Epilobium coloratum			PEM	Common
Scutellaria lateriflora			PEM	Common
Osmunda claytoniana			PEM	Uncommon
Agrimonia striata			PEM	Uncommon
Solidago gigantea			PEM	Uncommon
Rumex obtusifolius			PEM	Uncommon
Carex crinita			PEM	Uncommon
Persicaria sagittata			PEM	Uncommon

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

The wetland has been altered to have an emergent component, but the plant communities in both components are not significantly disrupted.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
	X				Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
	X		L	C	Point source or stormwater discharge
	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		L	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		H	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
		X	H	U	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
X	X		H	C	Removal of large woody debris
					Cover of non-native and/or invasive species
	X		M	C	Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The area is wooded, and has been used for logging. A residential building has also caused disruption due to woody vegetation clearing for access.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity			✓		
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat		✓			
Shoreline Protection		✓			
Flood and Stormwater Storage	✓				
Water Quality Protection		✓			
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	No invasive species observed, decent plant community species diversity
Human Use Values	Potential for hunting
Wildlife Habitat	Provides some habitat due to habitat structure interspersed
Fish and Aquatic Life Habitat	Habitat provided by seep groundwater
Shoreline Protection	Dense vegetation in wetland
Flood and Stormwater Storage	Discharges water, does not collect runoff
Water Quality Protection	Filters groundwater
Groundwater Processes	Groundwater discharge through seep

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc050_u
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309223 Long: -90.670688 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>The upland is a wormed mesic forest.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No indicators of wetland hydrology were observed.</u>		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc050_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharum</u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.67</u> (A/B)														
2. <u>Betula alleghaniensis</u>	<u>30.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Fraxinus pennsylvanica</u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u>Tilia americana</u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>80.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species <u>57</u></td> <td>x 4 = <u>228</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>142</u> (A)</td> <td><u>473</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.33</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species <u>57</u>	x 4 = <u>228</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>142</u> (A)	<u>473</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>75</u>	x 3 = <u>225</u>																	
FACU species <u>57</u>	x 4 = <u>228</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>142</u> (A)	<u>473</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Corylus cornuta</u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Abies balsamea</u>	<u>5.0</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
<u>10.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Athyrium angustum</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Dryopteris intermedia</u>	<u>20.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Mitchella repens</u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>															
4. <u>Maianthemum canadense</u>	<u>2.0</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>52</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
The upland is a mesic forest dominated by Acer saccharum and Betula alleghaniensis.																		

SOIL

Sampling Point: wasc050_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasc050_u_E



wasc050_u_S

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 10-Oct-19

Applicant/Owner: Enbridge State: WI Sampling Point: wasw040f

Investigator(s): ES/WC Section, Township, Range: S. 7 T. 44N R. 2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope: % /

Subregion (LRR or MLRA): LRR K Lat.: 46.30949747 Long.: -90.66735114 Datum: WGS 1984

Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 6 percent slopes NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sparsely vegetated depression in upland forest.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 6 Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 16		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Tree Stratum (Plot size: 30')				Dominant Species?	Indicator Status	Sampling Point: <u>wasw040f</u>	
Tree Stratum	Absolute % Cover	Rel. Strat. Cover	Indicator Status				
1. <i>Fraxinus pennsylvanica</i>	30	<input checked="" type="checkbox"/> 34.5%	FACW	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)			
2. <i>Tsuga canadensis</i>	17	<input type="checkbox"/> 19.5%	FACU				
3. <i>Acer rubrum</i>	35	<input checked="" type="checkbox"/> 40.2%	FAC				
4. <i>Acer saccharum</i>	5	<input type="checkbox"/> 5.7%	FACU				
5.	0	<input type="checkbox"/> 0.0%					
6.	0	<input type="checkbox"/> 0.0%					
7.	0	<input type="checkbox"/> 0.0%					
Sapling/Shrub Stratum (Plot size: 15')				87	Prevalence Index worksheet: Total % Cover of: <u>0</u> x 1 = <u>0</u> FACW species <u>67</u> x 2 = <u>134</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>32</u> x 4 = <u>128</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>134</u> (A) <u>367</u> (B) Prevalence Index = B/A = <u>2.739</u>		
1. <i>Fraxinus nigra</i>	35	<input checked="" type="checkbox"/> 77.8%	FACW				
2. <i>Tsuga canadensis</i>	5	<input type="checkbox"/> 11.1%	FACU				
3. <i>Acer saccharum</i>	5	<input type="checkbox"/> 11.1%	FACU				
4.	0	<input type="checkbox"/> 0.0%					
5.	0	<input type="checkbox"/> 0.0%					
6.	0	<input type="checkbox"/> 0.0%					
Herb Stratum (Plot size: 5')				45	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
1. <i>Carex Intumescens</i>	2	<input checked="" type="checkbox"/> 100.0%	FACW				
2.	0	<input type="checkbox"/> 0.0%					
3.	0	<input type="checkbox"/> 0.0%					
4.	0	<input type="checkbox"/> 0.0%					
5.	0	<input type="checkbox"/> 0.0%					
6.	0	<input type="checkbox"/> 0.0%					
7.	0	<input type="checkbox"/> 0.0%					
8.	0	<input type="checkbox"/> 0.0%					
9.	0	<input type="checkbox"/> 0.0%					
10.	0	<input type="checkbox"/> 0.0%					
11.	0	<input type="checkbox"/> 0.0%					
12.	0	<input type="checkbox"/> 0.0%					
Woody Vine Stratum (Plot size: 15')				2	Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height.		
1.	0	<input type="checkbox"/> 0.0%					
2.	0	<input type="checkbox"/> 0.0%					
3.	0	<input type="checkbox"/> 0.0%					
4.	0	<input type="checkbox"/> 0.0%					
				0	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>		
				0			

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FW

Sampling Point: wasw040f

Northcentral and Northeast Region - Version 2.0

Plot ID: **wasw040f**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: **DSCN8053.JPG**

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: **DSCN8054.JPG**

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

Plot ID: **wasw040f**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Pho



No Photo

Photo File: **DSCN8055.JP** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

No Photo

No Photo

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

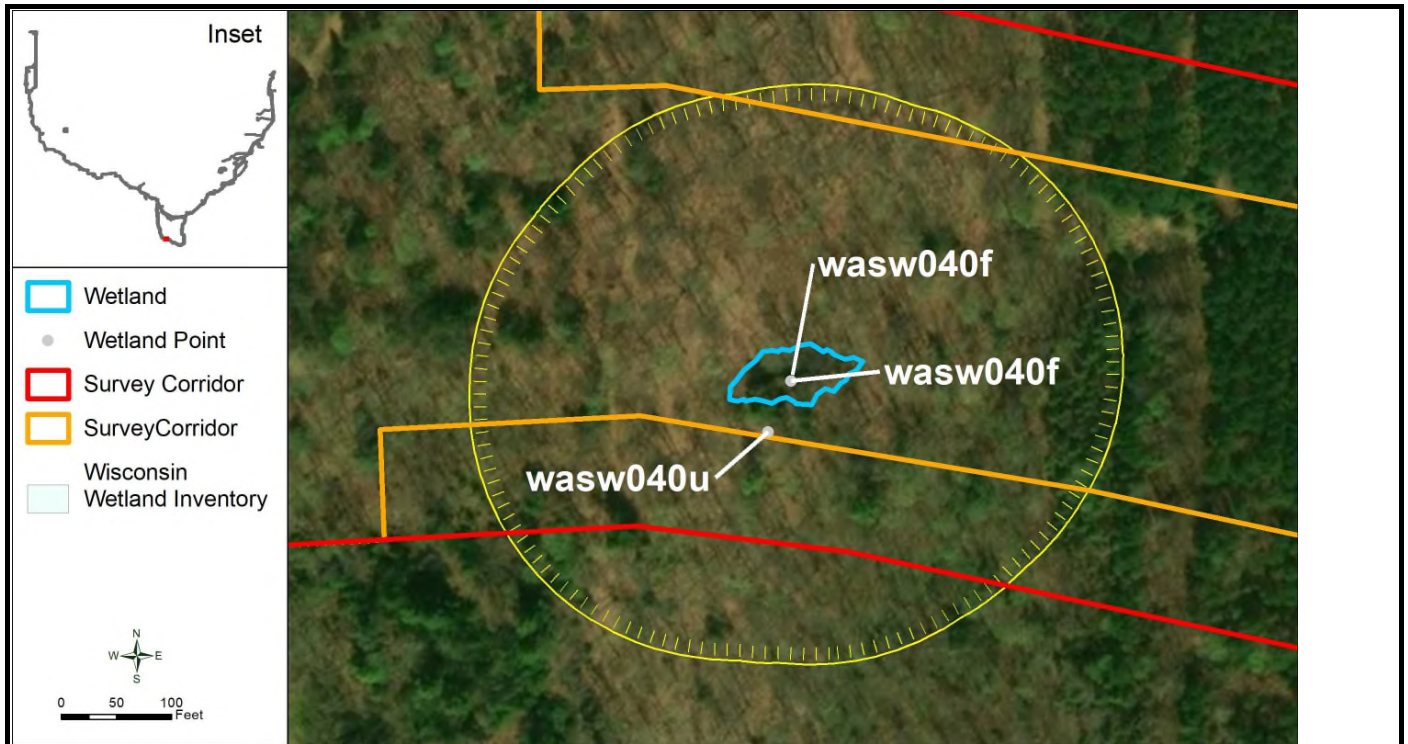
Long/Easting: Lat/Northing:

Description:

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION wasw040f			
Project name: Line 5 Pipeline	Evaluator(s): Emily Stulik and Wes Conway		
File #:	Date of visit(s): 10/10/2019		
Location: PLSS: WI46 T44N R2W SN7	Ecological Landscape: North Central Forest		
Lat: 46.30949747 Long: -90.66735114	Watershed: Upper bad river 0401030203		
County: Ashland Town/City/Village: Mellen			
SITE DESCRIPTION			
Soils: Mapped Type(s): Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 6 percent slopes	WWI Class: unmapped		
Field Verified: Yes	Wetland Type(s): hardwood swamp		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Wetland Size: 0.10</td> <td style="width: 50%;">Wetland Area Impacted</td> </tr> </table>	Wetland Size: 0.10	Wetland Area Impacted
Wetland Size: 0.10	Wetland Area Impacted		
Hydrology: seasonally high water table, ponding in depression, ie water stained leaves, sparsely vegetated concave surface	Vegetation: Plant Community Description(s): Fraxinus pennsylvanica, Acer rubrum, Fraxinus nigra, Carex intumescens		

SITE MAP



SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1		P	Used for recreation (hunting, birding, hiking, etc.). List: located on private, forested property
2	N		Used for educational or scientific purposes
3	N		Visually or physically accessible to public
4	N		Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N		In or adjacent to RED FLAG areas List:
6	N		Supports or provides habitat for endangered, threatened or special concern species
7		P	In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y		Wetland and contiguous habitat >10 acres
2	N		3 or more strata present (>10% cover)
3	N		Within or adjacent to habitat corridor or established wildlife habitat area
4	Y		100 m buffer – natural land cover >50%(south) 75% (north) intact
5	N		Occurs in a Joint Venture priority township
6	Y		Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N		Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y		Part of a large habitat block that supports area sensitive species
9	Y		Ephemeral pond with water present > 45 days
10	N		Standing water provides habitat for amphibians and aquatic invertebrates
11	N		Seasonally exposed mudflats present
12	N		Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N		Wetland is connected or contiguous with perennial stream or lake
2	N		Standing water provides habitat for amphibians and aquatic invertebrates
3	N		Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N		Vegetation is inundated in spring
SP			Shoreline Protection
1	N		Along shoreline of a stream, lake, pond or open water area (>1 acre) - if no, not applicable
2	N		Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N		Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y		Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y		Water flow through wetland is NOT channelized
3	N		Dense, persistent vegetation
4	Y		Evidence of flashy hydrology
5	N		Point or non-point source inflow
6	N		Impervious surfaces cover >10% of land surface within the watershed
7	N		Within a watershed with ≤10% wetland
8			Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N		Provides substantial storage of storm and floodwater based on previous section
2	Y		Basin wetland <u>or</u> constricted outlet
3	Y		Water flow through wetland is NOT channelized
4	N		Vegetated wetland associated with a lake or stream
5	N		Dense, persistent vegetation
6	N		Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N		Stormwater or surface water from agricultural land is major hydrology source
8	N		Discharge to surface water
9	N		Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y		Springs, seeps or indicators of groundwater present
2	N		Location near a groundwater divide or a headwater wetland
3	N		Wetland remains saturated for an extended time period with no additional water inputs
4	N		Wetland soils are organic
5	N		Wetland is within a wellhead protection area

HU 7 ongoing cultural surveys at project site.
WH 2 sparsely vegetated concave surface, <5% herbaceous layer
WH 6 forested wetland depression surrounded by upland topo, soil, and veg
WH 7, 8 wetland surrounded by intact forested block, suitable habitat
WH 9 depression hydrology and soils indicative of <45 day surface water, ie sparsely vegetated concave surface, water stained leaves, reduced matrix
ST 1 wetland is a depression/basin
ST 4 water table, sparsely vegetated concave surface, water stained leaves

List: direct observation, tracks, scat, other sign; **type of habitat:** nesting, migratory, winter, etc.

[illegible]

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

[illegible]

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

missing herbaceous stratum due to sparsely vegetated concave surface.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X		M	UC	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
X	X		M	UC	Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
	X		M	UC	Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

Downed, felled trees observed adjacent to wetland and within surrounding area (100m) soil excavation/construction also observed within assessment area

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		x			
Human Use Values	x				
Wildlife Habitat		x			
Fish and Aquatic Life Habitat	x				
Shoreline Protection					x
Flood and Stormwater Storage	x				
Water Quality Protection	x				
Groundwater Processes	x				

FUNCTION	RATIONALE
Floristic Integrity	herbaceous strata missing due to sparsely vegetated concave surface.
Human Use Values	observed construction, excavation, felling
Wildlife Habitat	reasonable assumption wetland supports amphibian breeding and is vernal pond in springtime, within large upland forest bloc
Fish and Aquatic Life Habitat	amphibian breeding pond
Shoreline Protection	N/A
Flood and Stormwater Storage	acts as basin but is 0.1 ac, is forested depressional wetland. Hydrology suggests longer term saturation (reduced matrix, water stained leaves, sparsely vegetated concave surface)
Water Quality Protection	minimal, 0.1 ac wetland. Not associated with stream
Groundwater Processes	evidence of indicators

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling. Tree removal	medium
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation and tree removal for construction. wildlife habitat buffer- amphibian breeding vernal pool adj to upland habitat	medium
Cumulative Impacts	Operational vegetation maintenance	low
Spatial/Habitat Integrity	Temporary construction impacts.	low
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 10-Oct-19

Applicant/Owner: Enbridge State: WI Sampling Point: wasw040u

Investigator(s): ES/WC Section, Township, Range: S. 7 T. 44N R. 2W

Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): undulating Slope: 1.7 % / 1.0

Subregion (LRR or MLRA): LRR K Lat.: 46.30937254 Long.: -90.66743877 Datum: WGS 1984

Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 6 percent slopes NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: (Explain alternative procedures here or in a separate report.)	

Hydrology

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of 2 required)</u>	
<u>Primary Indicators (minimum of one required: check all that apply)</u>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

VEGETATION - Use scientific names of plants

Sampling Point: wasw040u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Tsuga canadensis</i>	25	<input checked="" type="checkbox"/> 45.5%	FACU
2. <i>Ostrya virginiana</i>	5	<input type="checkbox"/> 9.1%	FACU
3. <i>Acer saccharum</i>	25	<input checked="" type="checkbox"/> 45.5%	FACU
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
Sapling/Shrub Stratum (Plot size: <u>15'</u>)		55 = Total Cover	
1. <i>Ostrya virginiana</i>	65	<input checked="" type="checkbox"/> 86.7%	FACU
2. <i>Acer saccharum</i>	5	<input type="checkbox"/> 6.7%	FACU
3. <i>Quercus rubra</i>	2	<input type="checkbox"/> 2.7%	FACU
4. <i>Tsuga canadensis</i>	3	<input type="checkbox"/> 4.0%	FACU
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
Herb Stratum (Plot size: <u>5'</u>)		75 = Total Cover	
1. <i>Prunus serotina</i>	5	<input checked="" type="checkbox"/> 23.8%	FACU
2. <i>Acer rubrum</i>	2	<input type="checkbox"/> 9.5%	FAC
3. <i>Trillialis borealis</i>	2	<input type="checkbox"/> 9.5%	FAC
4. <i>Carex pedunculata</i>	2	<input type="checkbox"/> 9.5%	FAC
5. <i>Eurybia macrophylla</i>	3	<input checked="" type="checkbox"/> 14.3%	UPL
6. <i>Dryopteris carthusiana</i>	5	<input checked="" type="checkbox"/> 23.8%	FACW
7. <i>Symphotrichum lateriflorum</i>	2	<input type="checkbox"/> 9.5%	FAC
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
11. _____	0	<input type="checkbox"/> 0.0%	_____
12. _____	0	<input type="checkbox"/> 0.0%	_____
Woody Vine Stratum (Plot size: <u>15'</u>)		21 = Total Cover	
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
		0 = Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>8</u>	x 3 = <u>24</u>
FACU species <u>135</u>	x 4 = <u>540</u>
UPL species <u>3</u>	x 5 = <u>15</u>
Column Totals: <u>151</u> (A)	<u>589</u> (B)

Prevalence Index = B/A = 3.901

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FW

Sampling Point: wasw040u

Northcentral and Northeast Region - Version 2.0

Plot ID: **wasw040u**

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Photos\



Photo File: **DSCN8056.JPG**

Orientation: -facing

Lat/Long or UTM : Long/Easting:

Lat/Northing:

Description:



Photo File: **DSCN8057.JPG**

Orientation: -facing

Lat/Long or UTM: Long/Easting:

Lat/Northing:

Description:

Plot ID: wasw040u

Photo Path: C:\WetForm\ERM Line 5 Pipeline\Pho



Photo File: **DSCN8058.JP** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **DSCN8059.JPG** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

No Photo

No Photo

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

Photo File: **None.bmp** Orientation: -facing

Long/Easting: Lat/Northing:

Description:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc051e_w
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309814 Long: -90.666091 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a fresh wet meadow that has been disturbed by recent and historic logging activity. Piles of woody debris created by logging are present around the wetland, and it likely only exists due to this disturbance. The feature is part of a large PEM/PFO complex.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.5</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The hydrologic regime is seasonally saturated, with recharge hydrology. The wetland is fed in part by the small stream sasc033e, which dissipates in the wetland.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc051e_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3.0</u> (A) Total Number of Dominant Species Across All Strata: <u>3.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>68.0</u></td> <td>x 1 = <u>68.0</u></td> </tr> <tr> <td>FACW species <u>35.0</u></td> <td>x 2 = <u>70.0</u></td> </tr> <tr> <td>FAC species <u>5.0</u></td> <td>x 3 = <u>15.0</u></td> </tr> <tr> <td>FACU species <u>0.0</u></td> <td>x 4 = <u>0.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>108.0</u> (A)</td> <td><u>153.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.4</u>	Total % Cover of:	Multiply by:	OBL species <u>68.0</u>	x 1 = <u>68.0</u>	FACW species <u>35.0</u>	x 2 = <u>70.0</u>	FAC species <u>5.0</u>	x 3 = <u>15.0</u>	FACU species <u>0.0</u>	x 4 = <u>0.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>108.0</u> (A)	<u>153.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>68.0</u>	x 1 = <u>68.0</u>																	
FACW species <u>35.0</u>	x 2 = <u>70.0</u>																	
FAC species <u>5.0</u>	x 3 = <u>15.0</u>																	
FACU species <u>0.0</u>	x 4 = <u>0.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>108.0</u> (A)	<u>153.0</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Calamagrostis canadensis</u>	<u>40.0</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Impatiens capensis</u>	<u>15.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Persicaria sagittata</u>	<u>10.0</u>	<u>N</u>	<u>OBL</u>															
4. <u>Eutrochium maculatum</u>	<u>10.0</u>	<u>N</u>	<u>OBL</u>															
5. <u>Rubus idaeus</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
6. <u>Solidago gigantea</u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
7. <u>Scirpus cyperinus</u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>															
8. <u>Onoclea sensibilis</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
9. <u>Epilobium coloratum</u>	<u>2.0</u>	<u>N</u>	<u>OBL</u>															
10. <u>Verbena hastata</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
11. <u>Equisetum sylvaticum</u>	<u>1.0</u>	<u>N</u>	<u>FACW</u>															
12. <u>Galium asprellum</u>	<u>1.0</u>	<u>N</u>	<u>OBL</u>															
<u>98.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The wetland is a highly disturbed area dominated by Calamagrostis canadensis, with a mix of advantageous species present throughout the feature.																		

SOIL

Sampling Point: wasc051e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Soils are mucky above with redox in the lower layer.



wasc051e_w_E



wasc051e_w_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc051f_w
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309273 Long: -90.662228 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) The wetland is a large hardwood swamp/fresh wet meadow complex, and has been substantially disturbed by logging.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The hydrologic regime is seasonally saturated, with recharge hydrology. Hydrology has been affected by either beaver activity or logging activity. Rain events occurred prior to and during the time of survey. A small stream feeds into this component of the wetland.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc051f_w

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>40.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)														
2. <u>Tilia americana</u>	<u>20.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Ulmus americana</u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u>Acer rubrum</u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>80.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>124</u></td> <td>x 2 = <u>248</u></td> </tr> <tr> <td>FAC species <u>17</u></td> <td>x 3 = <u>51</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>178</u> (A)</td> <td><u>441</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.48</u>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>124</u>	x 2 = <u>248</u>	FAC species <u>17</u>	x 3 = <u>51</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>178</u> (A)	<u>441</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>2</u>	x 1 = <u>2</u>																	
FACW species <u>124</u>	x 2 = <u>248</u>																	
FAC species <u>17</u>	x 3 = <u>51</u>																	
FACU species <u>35</u>	x 4 = <u>140</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>178</u> (A)	<u>441</u> (B)																	
Sapling/Shrub Stratum (Plot size: 15')																		
1. <u>Acer saccharum</u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Ulmus americana</u>	<u>10.0</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: 5')																		
1. <u>Carex bromoides</u>	<u>60.0</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Dryopteris intermedia</u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
3. <u>Acer saccharum</u>	<u>5.0</u>	<u>N</u>	<u>FACU</u>															
4. <u>Equisetum arvense</u>	<u>2.0</u>	<u>N</u>	<u>FAC</u>															
5. <u>Rubus pubescens</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
6. <u>Symphotrichum puniceum</u>	<u>2.0</u>	<u>N</u>	<u>OBL</u>															
7. <u>Fraxinus nigra</u>	<u>2.0</u>	<u>N</u>	<u>FACW</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>78</u> = Total Cover																		
Woody Vine Stratum (Plot size: 30')																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The hardwood swamp component is dominated by Fraxinus nigra and Carex bromoides.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wasc051f_w

[illegible]



wasc051f_w_N



wasc051f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): BRG/JSW	
File #: wasc051	Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.309825</u> Long: <u>-90.666099</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 809C Gogebic-Metonga-Rock outcrop complex, 5172C Gogebic, very stony-Pence, very stony-Cathro complex, 5171B Tula-Wormet-Gogebic complex Field Verified: Series not verified. Soils were a mucky mineral over clay loam in both the forested and emergent components.	WWI Class: T3/5K, T5/S3K Wetland Type(s): PEM/PFO complex - Fresh wet meadow/Hardwood swamp	
Hydrology: The hydrologic regime is seasonally saturated, with recharge hydrology. Several small streams feed into the wetland and one stream flows through it. The hydrology has been disturbed by logging throughout, most notably through the compaction of unpaved logging roads and piling of woody debris.	Wetland Size: 2.46	Wetland Area Impacted 2.46
	Vegetation: Plant Community Description(s): The fresh wet meadow component dominated by Calamagrostis canadensis, with a mix of other herbaceous vegetation found often in disturbed areas, and the dominant herbaceous vegetation is variable. The hardwood swamp component is dominated by Fraxinus nigra and Tilia americana, with an herbaceous layer of Carex bromoides.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

ST-2: water flow is channelized in some parts, but not channelized throughout the majority of the wetland
ST-3: due to logging activity, the wetland is full of advantageous herbaceous vegetation
WQ-8: in some areas the wetland discharges water, but this is not the major hydrologic effect of the wetland

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Deer/mammals
	Y	Avian
	Y	Amphibians

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)*

	Low	Medium	High	Exceptional
Invasive species cover	> 50% <input type="checkbox"/>	20-50% <input type="checkbox"/>	10-20% <input type="checkbox"/>	<10% <input checked="" type="checkbox"/>
Strata	Missing stratum(a) <input type="checkbox"/> or bare due to invasive species	All strata present but reduced native species <input type="checkbox"/>	All strata present and good assemblage of native species <input checked="" type="checkbox"/>	All strata present, conservative species represented <input type="checkbox"/>
NHI plant community ranking	S4 <input type="checkbox"/>	S3 <input checked="" type="checkbox"/>	S2 <input type="checkbox"/>	S1-S2 (S2 high quality) <input type="checkbox"/>
Relative frequency of plant community in watershed	Abundant <input type="checkbox"/>	Common <input checked="" type="checkbox"/>	Uncommon <input type="checkbox"/>	Rare <input type="checkbox"/>
FQI (optional)	<13 <input type="checkbox"/>	13-23 <input type="checkbox"/>	23-32 <input type="checkbox"/>	>32 <input type="checkbox"/>
Mean C (optional)	<2.4 <input type="checkbox"/>	2.4-4.2 <input type="checkbox"/>	4.3-4.7 <input type="checkbox"/>	>4.7 <input type="checkbox"/>

*Note: separate plant communities are described independently

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Fraxinus nigra			PFO, PEM	Abundant
Tilia americana			PFO	Common
Ulmus americana			PFO	Common
Acer rubrum			PFO	Common
Acer saccharum			PFO	Common
Carex bromoides			PFO	Abundant
Dryopteris intermedia			PFO	Uncommon
Equisetum arvense			PFO	Uncommon
Rubus pubescens			PFO	Uncommon
Symphyotrichum puniceum			PFO	Uncommon
Calamagrostis canadensis			PEM	Common
Impatiens capensis			PEM	Common
Persicaria sagittata			PEM	Common
Eutrochium maculatum			PEM	Common
Rubus idaeus			PEM	Uncommon
Solidago gigantea			PEM	Uncommon
Scirpus cyperinus			PEM	Uncommon
Onoclea sensibilis			PEM	Uncommon
Epilobium coloratum			PEM	Uncommon
Verbena hastata			PEM	Uncommon
Equisetum sylvaticum			PEM	Uncommon
Galium asprellum			PEM	Uncommon

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

Disturbed by logging, and filled with common advantageous species. Some upland pockets of young forest are present. Invasive cover is minimal, and diversity is still decent.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
X	X		H	C	Point source or stormwater discharge
X	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
	X		M	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
	X		L	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	H	C	Removal of tree or shrub strata – logging, unprescribed fire
X	X		H	C	Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland has been stressed by present and historic logging activity. Logging machinery travel has created compacted unpaved trails.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity			✓		
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection		✓			
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Altered plant community with advantageous species, but no invasives and decent diversity in both components
Human Use Values	Hunting
Wildlife Habitat	Deer and avian habitat, diverse habitat structures
Fish and Aquatic Life Habitat	Habitat provided after rain events and by streams
Shoreline Protection	The wetland is densely vegetated
Flood and Stormwater Storage	Depressional wetland that obtains some runoff from compacted logging trails. The wetland is large
Water Quality Protection	Densely vegetated depression of large size, associated with several streams
Groundwater Processes	Groundwater recharge, some discharge in areas

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc051e_u
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309950 Long: -90.666132 Datum: WGS84
 Soil Map Unit Name: Gogebic-Metonga-Rock outcrop complex, 6 to 18 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland is a logged mesic forest that has also been affected by worms.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasc051e_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>20.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>14.29</u> (A/B)														
2. <u><i>Pinus resinosa</i></u>	<u>20.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Thuja occidentalis</i></u>	<u>10.0</u>	<u>N</u>	<u>FACW</u>															
4. <u><i>Quercus rubra</i></u>	<u>10.0</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>60.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>107</u></td> <td>x 4 = <u>428</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>122</u> (A)</td> <td><u>458</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.75</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>107</u>	x 4 = <u>428</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>122</u> (A)	<u>458</u> (B)
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OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>15</u>	x 2 = <u>30</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>107</u>	x 4 = <u>428</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>122</u> (A)	<u>458</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Corylus cornuta</i></u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>															
2. <u><i>Tilia americana</i></u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Acer saccharum</i></u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Acer saccharum</i></u>	<u>5.0</u>	<u>Y</u>	<u>FACU</u>															
2. <u><i>Fraxinus pennsylvanica</i></u>	<u>5.0</u>	<u>Y</u>	<u>FACW</u>															
3. <u><i>Tilia americana</i></u>	<u>2.0</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>12</u> = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The upland has been recently logged, and as such vegetative cover is somewhat reduced. The <i>Pinus resinosa</i> has been planted for future lumber harvest.																		

SOIL

Sampling Point: wasc051e_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasc051e_u_E



wasc051e_u_N

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wasc051f_u
 Investigator(s): BRG/JSW Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.309111 Long: -90.662274 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland is a mesic forest that has been disturbed in the past by logging, and as a result is somewhat young.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasc051f_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Tilia americana</i></u>	<u>40.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.00</u> (A/B)														
2. <u><i>Acer saccharum</i></u>	<u>30.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Populus tremuloides</i></u>	<u>10.0</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Fraxinus pennsylvanica</i></u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>85.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>535</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.45</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>535</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>80</u>	x 4 = <u>320</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>155</u> (A)	<u>535</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Abies balsamea</i></u>	<u>40.0</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>40.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Carex pedunculata</i></u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Acer saccharum</i></u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Dryopteris intermedia</i></u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Fraxinus nigra</i></u>	<u>5.0</u>	<u>N</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>30</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) The upland is a mesic forest with a significant shrub layer of <i>Abies balsamea</i> , and numerous seedlings.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														

SOIL

Sampling Point: wasc051f_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wasc051f_u_S



wasc051f_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase050f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.307933 Long: -90.661848 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest system that includes a perennial stream (sase016p).	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) _____ Water Marks (B1) _____ Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Algal Mat or Crust (B4) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) _____ Aquatic Fauna (B13) _____ Marl Deposits (B15) _____ Hydrogen Sulfide Odor (C1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Presence of Reduced Iron (C4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Thin Muck Surface (C7) _____ Other (Explain in Remarks)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase050f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																												
1. <u><i>Betula alleghaniensis</i></u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.00</u> (A/B)																																																											
2. <u><i>Tilia americana</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACU</u>																																																												
3. _____	_____	_____	_____																																																												
4. _____	_____	_____	_____																																																												
5. _____	_____	_____	_____																																																												
6. _____	_____	_____	_____																																																												
7. _____	_____	_____	_____																																																												
<u>67.5</u> = Total Cover																																																															
Prevalence Index worksheet:																																																															
Total % Cover of:		Multiply by:																																																													
OBL species	<u>5</u>	x 1 =	<u>5</u>																																																												
FACW species	<u>85</u>	x 2 =	<u>170</u>																																																												
FAC species	<u>70</u>	x 3 =	<u>210</u>																																																												
FACU species	<u>17.5</u>	x 4 =	<u>70</u>																																																												
UPL species	<u>0</u>	x 5 =	<u>0</u>																																																												
Column Totals:	<u>177.5</u>	(A)	<u>455</u>	(B)																																																											
Prevalence Index = B/A = <u>2.56</u>																																																															
Hydrophytic Vegetation Indicators:																																																															
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation																																																															
<u>✓</u> 2 - Dominance Test is >50%																																																															
<u>✓</u> 3 - Prevalence Index is ≤3.0 ¹																																																															
<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)																																																															
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																																																															
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																															
Definitions of Vegetation Strata:																																																															
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.																																																															
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.																																																															
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.																																																															
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Hydrophytic Vegetation Present? Yes <u>✓</u> No <u> </u>																																																															
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Remarks: (Include photo numbers here or on a separate sheet.) Wet forest community. Braun-Blanquet scale used.																																																															

SOIL

Sampling Point: wase050f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Depleted matrix with redox concentrations present.



wase050f_w_N



wase050f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase050		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.308312</u> Long: <u>-90.661595</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C, 5171B, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony		WWI Class: T3/5K	
Field Verified: Series not verified. Soils were silt loam above clay loam.		Wetland Type(s): PFO - Hardwood Swamp	
		Wetland Size: 0.86	Wetland Area Impacted 0.86
Hydrology: The feature is a seasonally saturated basin. There is no standing water or saturation present at the time of survey. However, a perennial stream is associated with the feature.		Vegetation: Plant Community Description(s): There is a dense canopy of <i>Betula alleghaniensis</i> and <i>Acer saccharum</i> with <i>Tilia americana</i> along the wetland edge. The herbaceous layer contains mixed sedges.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	Y	Y	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: feature provides songbird habitat
WH-10, FA-2, 4: feature is not currently supporting standing water but likely does seasonally
ST-2, WQ-3, 8: perennial stream runs through the wetland

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Songbirds, arboreal mammals

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X	X	M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature, as well as the margins, show earthworm activity, and are impacted by historic logging.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection		✓			
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Moderate diversity across three strata
Human Use Values	Feature is not visible to the public and is likely not accessible or used for research or recreation
Wildlife Habitat	Herbaceous vegetation is dense with limited species diversity, tree cover may provide some habitat for songbirds and arboreal mammals, associated stream provides some habitat for aquatic species
Fish and Aquatic Life Habitat	Feature likely supports standing water only seasonally
Shoreline Protection	Associated with a perennial stream
Flood and Stormwater Storage	Area receives small quantities of runoff, is densely vegetated, but is not within an impactful area with respect to flood and stormwater storage
Water Quality Protection	Feature is densely vegetated and associated with a perennial waterbody
Groundwater Processes	Feature is seasonally saturated and is fed primarily by precipitation and runoff

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase050_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.308008 Long: -90.661606 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland point recorded within a sugar maple-basswood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase050_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																												
1. <u><i>Acer saccharum</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.67</u> (A/B)																																																											
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Total % Cover of:		Multiply by:																																																													
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FACU species	<u>62</u>	x 4 =	<u>248</u>																																																												
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Column Totals:	<u>97</u> (A)		<u>353</u> (B)																																																												
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Remarks: (Include photo numbers here or on a separate sheet.) Canopy includes sugar maple with basswood along with balsam fir in the shrub layer. Facultative vegetation passes the dominance test.																																																															

SOIL

Sampling Point: wase050_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soil meets hydric indicator F3; however, vegetation and landscape position not indicative of a wetland.



wase050_u_E



wase050_u_SE

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase049f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.308392 Long: -90.660609 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest within a slight depression surrounded by mesic hardwoods.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

Sampling Point: wase049f_w

Tree Stratum (Plot size: 30')			Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Fraxinus nigra</i>		50	Y	FACW
2.	<i>Betula alleghaniensis</i>		10	N	FAC
3.					
4.					
5.					
6.					
7.					
			60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer rubrum</i>		5	Y	FAC
2.					
3.					
4.					
5.					
6.					
7.					
			5	= Total Cover	
Herb Stratum (Plot size: 5')			Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Carex crinita</i>		5	Y	OBL
2.	<i>Dryopteris intermedia</i>		5	Y	FAC
3.	<i>Carex intumescens</i>		5	Y	FACW
4.	<i>Glyceria striata</i>		5	Y	OBL
5.	<i>Fraxinus nigra</i>		5	Y	FACW
6.	<i>Abies balsamea</i>		5	Y	FAC
7.					
8.					
9.					
10.					
11.					
12.					
			30	= Total Cover	
Woody Vine Stratum (Plot size: 30')			Absolute % Cover	Dominant Species?	Indicator Status
1.					
2.					
3.					
4.					
			0.0	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 10	x 1 = 10
FACW species 60	x 2 = 120
FAC species 25	x 3 = 75
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 95 (A)	205 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)
Wet forest system dominated by black ash. Braun-Blanquet scale used.

SOIL

Sampling Point: wase049f_w

[illegible]



wase049f_w_N



wase049f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase049		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.308175</u> Long: <u>-90.660478</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5171B Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony		WWI Class: N/A	
Field Verified: Series not verified. Soils were clay loam above clay.		Wetland Type(s): PFO - Hardwood Swamp	
		Wetland Size: 0.10	Wetland Area Impacted 0.10
Hydrology: The feature is a seasonally saturated basin. There is no standing water or saturation present at the time of survey.		Vegetation: Plant Community Description(s): The herbaceous layer is relatively sparse with cover of Carex crinita and Dryopteris intermedia. The canopy is dominated by Fraxinus nigra. There is a sparse shrub stratum present containing Acer rubrum.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh,shrub/emergent, wetland/upland complex,etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: feature provides songbird habitat

WH-10, FA-2, 4: not currently supporting standing water but likely does seasonally

Wildlife Habitat and Species Observation (including amphibians and reptiles)**List:** direct observation, tracks, scat, other sign; **type of habitat:** nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Songbirds, mammals, amphibians, insects

Fish and Aquatic Life Habitat and Species Observations**List:** direct observation, other sign; **type of habitat:** nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature, as well as the margins, show earthworm activity and are impacted by historic logging. There is a utility corridor present to the northeast of the feature within the buffer area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Moderate diversity across three strata
Human Use Values	Not visible to the public and is likely not accessible or used for research or recreation
Wildlife Habitat	Limited species diversity and provides habitat for songbirds, mammals, amphibians, and potentially insect pollinators
Fish and Aquatic Life Habitat	Feature likely supports standing water only seasonally
Shoreline Protection	N/A
Flood and Stormwater Storage	Area receives small quantities of runoff, not within an impactful area with respect to flood and stormwater storage
Water Quality Protection	Not directly associated with a stream or river
Groundwater Processes	Seasonally saturated and fed primarily by precipitation and runoff

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase049_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.308504 Long: -90.660479 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland point is located within a mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase049_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>62.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>44.44</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>62.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>27</u></td> <td>x 3 = <u>81</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>481</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.79</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>27</u>	x 3 = <u>81</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>127</u> (A)	<u>481</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>27</u>	x 3 = <u>81</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>127</u> (A)	<u>481</u> (B)																	
<u>25</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Abies balsamea</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
2. <u><i>Acer saccharum</i></u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Quercus rubra</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>25</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Mitchella repens</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Dryopteris intermedia</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Carex pedunculata</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
4. <u><i>Acer saccharum</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
5. <u><i>Osmunda claytoniana</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
6. <u><i>Athyrium angustum</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>39.5</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Canopy dominated by sugar maple with balsam fir in the shrub layer. Braun-Blanquet scale used.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														

SOIL

Sampling Point: wase049_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators were observed.



wase049_u_E



wase049_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase048e_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.308098 Long: -90.659591 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet meadow dominated by Canada bluejoint and located within an existing utility right-of-way.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely has a saturated hydrologic regime.		

Sampling Point: wase048e_w

Tree Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.							Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2.							Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3.							Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)	
4.								
5.								
6.								
7.								
				<u>0.0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u>)								Prevalence Index worksheet:
1.							Total % Cover of:	Multiply by:
2.							OBL species <u>65</u>	x 1 = <u>65</u>
3.							FACW species <u>0</u>	x 2 = <u>0</u>
4.							FAC species <u>0</u>	x 3 = <u>0</u>
5.							FACU species <u>0</u>	x 4 = <u>0</u>
6.							UPL species <u>0</u>	x 5 = <u>0</u>
7.							Column Totals: <u>65</u> (A)	<u>65</u> (B)
				<u>0.0</u>	= Total Cover	Prevalence Index = B/A = <u>1.00</u>		
Herb Stratum (Plot size: <u>5'</u>)								Hydrophytic Vegetation Indicators:
1.	<u>Calamagrostis canadensis</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation			
2.	<u>Scirpus cyperinus</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%			
3.	<u>Persicaria sagittata</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹			
4.					<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
5.					<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)			
6.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
7.					Definitions of Vegetation Strata:			
8.					Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
9.					Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.			
10.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
11.					Woody vines – All woody vines greater than 3.28 ft in height.			
12.								
				<u>65</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30'</u>)								Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.								
2.								
3.								
4.								
				<u>0.0</u>	= Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)								
Part of a larger wetland complex with this portion dominated by Canada bluejoint. Braun-Blanquet scale used.								

SOIL

Sampling Point: wase048e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soils were not sampled due to the proximity of existing buried utilities. Soils are assumed to be hydric based on landscape position and dominant vegetation.



wase048e_w_E



wase048e_w_NW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase048f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.307376 Long: -90.660694 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest community dominated by deciduous species.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature with saturation throughout most of the growing season.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase048f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u><i>Betula alleghaniensis</i></u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>90.00</u> (A/B)
2. <u><i>Fraxinus nigra</i></u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u><i>Acer rubrum</i></u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>60</u> = Total Cover				Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>2.50</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u><i>Fraxinus nigra</i></u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>15</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u><i>Equisetum pratense</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
2. <u><i>Dryopteris intermedia</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u><i>Carex crinita</i></u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	
4. <u><i>Abies balsamea</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
5. <u><i>Mitchella repens</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
6. <u><i>Rubus pubescens</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
7. <u><i>Carex pedunculata</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0.0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Wet forest community with an interrupted canopy of black ash with yellow birch.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sampling Point: wase048f_w

[illegible]



wase048f_w_E



wase048f_w_W

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase048		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.307223</u> Long: <u>-90.66053</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C, 5171B, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony		WWI Class: N/A	
Field Verified: Series not verified. Within the forested component, soils were mucky peat above silty clay loam. Soils were not sampled within the emergent component due to the potential for buried utilities. Soils are assumed to be hydric based on landscape position and vegetative cover.		Wetland Type(s): PFO - Hardwood Swamp, PEM - Fresh Wet Meadow	
Hydrology: The feature is a small saturated depression with scattered pockets of standing water throughout with signs of prolonged inundation.		Wetland Size: 0.64	Wetland Area Impacted 0.64
		Vegetation: Plant Community Description(s): The herbaceous layer relatively sparse with cover of Carex crinita and Dryopteris intermedia. The tree cover is composed of Betula alleghaniensis, Fraxinus nigra, and Acer rubrum. There is a sparse shrub stratum present containing Fraxinus nigra and Abies balsamea. The emergent portion of the complex is dominated by disturbance-tolerant species, including Calamagrostis canadensis.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	Y	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	Y	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: feature provides songbird habitat
WH-9, WQ-4, 8: currently supports standing water but is not a continuous pond
GW-1: some seepage present
GW-4: layer of mucky peat present within the forested component
WH-6: wetland is part of a complex including forested and emergent components

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Amphibians, arboreal species

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
X			M	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
	X	X	L	C	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
	X		M	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature, as well as the margins, show earthworm activity and are impacted by historic logging. The PEM portion of the complex has a power line running through it.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat		✓			
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Moderate diversity across three strata
Human Use Values	Feature is not visible to the public and is likely not accessible or used for research or recreation
Wildlife Habitat	Herbaceous vegetation is dense and tree cover is relatively diverse, standing water provides aquatic species habitat for amphibians, consistent tree cover provides arboreal species habitat
Fish and Aquatic Life Habitat	Feature provides standing water consistently
Shoreline Protection	N/A
Flood and Stormwater Storage	Area receives small quantities of runoff, is densely vegetated, but is not within an impactful area with respect to flood and stormwater storage
Water Quality Protection	Densely vegetated feature which is not directly associated with a stream or river
Groundwater Processes	Saturated consistently with recharge and some discharge hydrology, seeps present

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase048_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.307285 Long: -90.660612 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Upland consisting of a mesic hardwood system dominated by sugar maple.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase048_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharum</u>	<u>62.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>62.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</u></td> </tr> <tr> <td>FACU species <u>87.5</u></td> <td>x 4 = <u>350</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>152.5</u> (A)</td> <td><u>545</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.57</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>87.5</u>	x 4 = <u>350</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>152.5</u> (A)	<u>545</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>65</u>	x 3 = <u>195</u>																	
FACU species <u>87.5</u>	x 4 = <u>350</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>152.5</u> (A)	<u>545</u> (B)																	
<u>10</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Abies balsamea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Abies balsamea</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. <u>Mitchella repens</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Carex pedunculata</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>80</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)
Sugar maple dominated canopy with balsam fir throughout. Braun-Blanquet scale used.

SOIL

Sampling Point: wase048_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wase048_u_N



wase048_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase047f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.306779 Long: -90.660323 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest feature with an interrupted canopy.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase047f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77.78</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>12</u></td> <td>x 4 = <u>48</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>102</u> (A)</td> <td><u>228</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.24</u>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>12</u>	x 4 = <u>48</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>102</u> (A)	<u>228</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>80</u>	x 2 = <u>160</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>12</u>	x 4 = <u>48</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>102</u> (A)	<u>228</u> (B)																	
<u>10</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Fraxinus nigra</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex bromoides</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Tilia americana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Mitchella repens</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Carex crinita</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
5. <u>Rubus pubescens</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
6. <u>Equisetum pratense</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
7. <u>Athyrium angustum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
8. <u>Fragaria virginiana</u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>42</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Wet forest community with black ash. Braun-Blanquet scale used.																		

Hydrophytic Vegetation Present? Yes ✓ No _____

SOIL

Sampling Point: wase047f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Redox concentrations present in lower soil layers.



wase047f_w_E



wase047f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase047		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.30652</u> Long: <u>-90.659763</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C, 5171B, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony		WWI Class: N/A	
Field Verified: Series not verified. Soils were mucky peat above silt loam above sandy loam above silt loam.		Wetland Type(s): PFO - Hardwood Swamp	
		Wetland Size: 0.17	Wetland Area Impacted 0.17
Hydrology: The wetland is saturated with pockets of standing water throughout with signs of prolonged inundation.		Vegetation: Plant Community Description(s): The canopy and shrub strata are dominated by Fraxinus nigra, with a mixed ground layer.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	Y	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: feature provides songbird habitat
WH-10, FA-2: currently supports standing water
GW-4: layer of mucky peat soil is present

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Amphibians, insects, other arboreal species

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The floristic integrity is moderate with moderate diversity at the herbaceous layer. The tree and shrub strata are dominated by *Fraxinus nigra*.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		M	U	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature and surrounding area are impacted by earthworm activity and historic logging. There is a utility corridor present to the northeast of the feature within the buffer area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat		✓			
Shoreline Protection					✓
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Moderate diversity across three strata
Human Use Values	Not visible to the public and is likely not accessible or used for research or recreation
Wildlife Habitat	Feature provides aquatic habitat for amphibians and insects, tree cover for arboreal species
Fish and Aquatic Life Habitat	Feature provides standing water consistently
Shoreline Protection	N/A
Flood and Stormwater Storage	Area receives small quantities of runoff but is not within an impactful area with respect to flood and stormwater storage
Water Quality Protection	Moderately vegetated feature, not directly associated with a stream or river
Groundwater Processes	Saturated consistently with recharge and possibly some discharge hydrology

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase047_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.306916 Long: -90.660421 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Mesic hardwood forested dominated by sugar maple.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase047_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharum</u>	<u>37.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>16.67</u> (A/B)														
2. <u>Populus grandidentata</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>62.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>107.5</u></td> <td>x 4 = <u>430</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>132.5</u> (A)</td> <td><u>500</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.77</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>107.5</u>	x 4 = <u>430</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>132.5</u> (A)	<u>500</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>107.5</u>	x 4 = <u>430</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>132.5</u> (A)	<u>500</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Acer saccharum</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Mitchella repens</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Abies balsamea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Acer saccharum</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Carex pedunculata</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. <u>Fraxinus nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
6. <u>Dryopteris intermedia</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
7. <u>Oryzopsis asperifolia</u>	<u>2</u>	<u>N</u>	<u>NI</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>62</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Interrupted canopy of sugar maple with big-tooth aspen. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wase047_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators were observed.



wase047_u_NE



wase047_u_NW

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase029e_w
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.307194 Long: -90.658339 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil ☒, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet meadow with a floating mat and small pool in center. Wetland is driven by positive pressure on groundwater.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) _____ Water Marks (B1) _____ Sediment Deposits (B2) _____ Drift Deposits (B3) _____ Algal Mat or Crust (B4) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Sparsely Vegetated Concave Surface (B8)	_____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13) _____ Marl Deposits (B15) _____ Hydrogen Sulfide Odor (C1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Presence of Reduced Iron (C4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Thin Muck Surface (C7) _____ Other (Explain in Remarks)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>24</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Seasonally saturated discharge wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase029e_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>47</u></td> <td>x 1 = <u>47</u></td> </tr> <tr> <td>FACW species <u>37</u></td> <td>x 2 = <u>74</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>89</u> (A)</td> <td><u>136</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.53</u>	Total % Cover of:	Multiply by:	OBL species <u>47</u>	x 1 = <u>47</u>	FACW species <u>37</u>	x 2 = <u>74</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>89</u> (A)	<u>136</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>47</u>	x 1 = <u>47</u>																	
FACW species <u>37</u>	x 2 = <u>74</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>89</u> (A)	<u>136</u> (B)																	
1. <u>Rubus idaeus</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. <u>Calamagrostis canadensis</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Verbena hastata</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Carex lacustris</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
4. <u>Glyceria canadensis</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
5. <u>Phalaris arundinacea</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
6. <u>Solidago gigantea</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
7. <u>Eutrochium maculatum</u>	<u>2</u>	<u>N</u>	<u>OBL</u>															
8. <u>Epilobium ciliatum</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>84</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Cattail and duckweed in the wettest portion.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														

SOIL

Sampling Point: wase029e_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☒ Histic Epipedon (A2)
- ☒ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R. MLRA 149B**)

- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☒ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Muck and mucky mineral. Disturbed.



wase029e_w_N



wase029e_w_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase029f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.307139 Long: -90.658940 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest community that includes multiple ATV trails and is part of a larger wetland complex. Surrounding forest is dominated by sugar maple and hemlock.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) _____ Water Marks (B1) _____ Sediment Deposits (B2) _____ Drift Deposits (B3) _____ Algal Mat or Crust (B4) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Sparsely Vegetated Concave Surface (B8)	_____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13) _____ Marl Deposits (B15) _____ Hydrogen Sulfide Odor (C1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Presence of Reduced Iron (C4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Thin Muck Surface (C7) _____ Other (Explain in Remarks)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature with discharge hydrology.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase029f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus nigra</u>	<u>37.5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>90.00</u> (A/B)
2. <u>Betula alleghaniensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>47.5</u> = Total Cover				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>30</u>	x 1 =	<u>30</u>	
FACW species	<u>62.5</u>	x 2 =	<u>125</u>	
FAC species	<u>25</u>	x 3 =	<u>75</u>	
FACU species	<u>5</u>	x 4 =	<u>20</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>122.5</u>	(A)	<u>250</u>	(B)
Prevalence Index = B/A = <u>2.04</u>				
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹				
<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata:				
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.) Canopy of black ash includes yellow birch and balsam fir. Ground layer includes lake sedge.				

SOIL

Sampling Point: wase029f_w

[illegible]



wase029f_w_N



wase029f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): KDF/ARK	
File #: wase029		Date of visit(s): 09/28/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.307275</u> Long: <u>-90.658372</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C Gogebic, very stony-Pence, very stony-Cathro complex, 5171B Tula-Wormet-Gogebic complex Field Verified: Series not verified. Soils were muck over mucky mineral over muck in the emergent component, and silty clay loam over coarse sand over sandy clay loam over clay loam in the forested component.		WWI Class: N/A	
		Wetland Type(s): PFO/PEM complex - hardwood swamp/fresh wet meadow	
		Wetland Size: 1.22	Wetland Area Impacted 1.22
		Vegetation: Plant Community Description(s): For the PFO, the canopy is dominated by <i>Betula alleghaniensis</i> . The shrub vegetation is dominated by <i>Ulmus americana</i> , <i>Fraxinus nigra</i> , and <i>Abies balsamea</i> . The herbaceous vegetation is dominated by <i>Carex lacustris</i> and <i>Carex bromoides</i> . For the PEM, the herbaceous vegetation is dominated by <i>Scirpus cyperinus</i> and <i>Calamagrostis canadensis</i> .	
Hydrology: The hydrologic regime is seasonally saturated with discharge hydrology, located at the top of a hill with a floating mat and small pool in the center of the wetland. Within the PFO, there are small pools of standing water present.			

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	Y	Y	Used for recreation (hunting, birding, hiking, etc.). List: ATV use
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	Y	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-1: an ATV trail runs through the middle of the wetland
WH-4: the utility corridor is not considered to be a significant wildlife barrier
WH-7: forested upland area is present on either side of the utility corridor
WH-10: standing water is present within small pockets of the wetland, along the margin of the standing water are floating mats of vegetation
WQ-8: located on top of hill, discharge wetland
ST-5: wetland is located at the top of a hill within a utility corridor and is heavily disturbed
GW-4: soils were organic in the disturbed emergent wetland component

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Avian, herpetofauna, mammals, insects

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
X	X		H	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
	X	X	L	U	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
X	X		M	C	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is heavily impacted by the utility corridor and associated ATV trail running through the middle of the wetland.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values		✓			
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Native species, non-natives present, highly disturbed site
Human Use Values	Used for ATV activity
Wildlife Habitat	Commonly disturbed by ATV use through the middle of the trail
Fish and Aquatic Life Habitat	Standing water could support aquatic invertebrates but not fish
Shoreline Protection	N/A
Flood and Stormwater Storage	Closed basin, dense herbaceous vegetation
Water Quality Protection	See above
Groundwater Processes	Discharge hydrology

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase029_u
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.306838 Long: -90.658441 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Mesic forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase029_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)														
2. <u><i>Ostrya virginiana</i></u>	<u>40</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Abies balsamea</i></u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Betula alleghaniensis</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>95</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>101</u></td> <td>x 4 = <u>404</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>123</u> (A)</td> <td><u>470</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.82</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>101</u>	x 4 = <u>404</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>123</u> (A)	<u>470</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>22</u>	x 3 = <u>66</u>																	
FACU species <u>101</u>	x 4 = <u>404</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>123</u> (A)	<u>470</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Mitchella repens</i></u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Carex pedunculata</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
3. <u><i>Trientalis borealis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Brachyelytrum erectum</i></u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>28</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic forest plants.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														

SOIL

Sampling Point: wase029_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No indicators of hydric soils were observed.



wase029_u_N



wase029_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase045f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305953 Long: -90.658674 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: PFO1Bg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
Mesic to wet hardwood forest with an interrupted canopy.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: Located within a depressional setting and likely has a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase045f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>37.5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Betula alleghaniensis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>47.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>17.5</u></td> <td>x 1 = <u>17.5</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92.5</u> (A)</td> <td><u>182.5</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.97</u>	Total % Cover of:	Multiply by:	OBL species <u>17.5</u>	x 1 = <u>17.5</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92.5</u> (A)	<u>182.5</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>17.5</u>	x 1 = <u>17.5</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>92.5</u> (A)	<u>182.5</u> (B)																	
<u>17.5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Fraxinus nigra</u>	<u>17.5</u>	<u>Y</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>17.5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Scirpus hattorianus</u>	<u>17.5</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Dryopteris intermedia</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
3. <u>Rubus pubescens</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>27.5</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)
 Sample point collected on an ATV trail and not representative of the overall feature. Braun-Blanquet scale used.

SOIL

Sampling Point: wase045f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Reddish soils with redox concentrations present.



wase045f_w_E



wase045f_w_N

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase045		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.306853</u> Long: <u>-90.658722</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C, 5171B, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony Field Verified: Series not verified. Soils were silt loam above sandy clay loam.		WWI Class: N/A Wetland Type(s): PFO - Hardwood Swamp	
		Wetland Size: 0.08	Wetland Area Impacted 0.08
Hydrology: The feature is a compacted artificial wetland, likely an old logging road. The hydrologic regime is seasonally saturated with recharge hydrology.		Vegetation: Plant Community Description(s): The herbaceous layer is relatively sparse with a ground layer of sedges. The tree cover is rooted at the margins of the feature but cover the top the wetland and includes <i>Betula alleghaniensis</i> and <i>Fraxinus nigra</i> .	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: The feature, primarily the margins, provide songbird habitat.

WH-9, WQ-4,8: The feature does not currently support standing water but seems to seasonally.

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; **type of habitat:** nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	The margins of the feature provide habitat for arboreal species including some songbirds.

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; **type of habitat:** nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
X	X		M	C	Point source or stormwater discharge
X	X		M	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
X	X		M	C	Roads or railroad
	X		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X	X	M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	H	C	Removal of tree or shrub strata – logging, unprescribed fire
X	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature, as well as the margins, show earthworm activity. The wetland is impacted by historic logging, and is itself, likely an old logging road.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values	✓				
Wildlife Habitat	✓				
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Plant community is disturbed with low overall diversity
Human Use Values	The feature not visible to the public and is likely not accessible or used for research, recreation.
Wildlife Habitat	Herbaceous vegetation is sparse and tree cover is primarily a single species, margins of the feature provide habitat for arboreal species including some songbirds
Fish and Aquatic Life Habitat	Feature potentially provides standing water seasonally
Shoreline Protection	N/A
Flood and Stormwater Storage	Area receives small quantities of runoff and is not densely vegetated
Water Quality Protection	Sparsely vegetated feature which is not directly associated with standing water
Groundwater Processes	Feature is seasonally saturated and fed by precipitation and runoff

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase045_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305798 Long: -90.658621 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Upland point collected in a mesic hardwood forest with an interrupted canopy. Sample point is shared with wetland wase046f.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No wetland hydrology indicators were observed.</u>		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase045_u

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FACU species	<u>77.5</u>	x 4 =	<u>310</u>																																																																																																																																																		
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Remarks: (Include photo numbers here or on a separate sheet.)

Canopy dominated by sugar maple and hemlock with scattered balsam fir . Relatively bare ground layer. Braun-Blanquet scale used.

SOIL

Sampling Point: wase045_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soils meet hydric indicator F21; however, landscape position and dominant vegetation not indicative of wetland.



wase045_u_E



wase045_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase046f_w
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305689 Long: -90.658490 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest community associated with a perennial waterbody feature.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) _____ Water Marks (B1) _____ Sediment Deposits (B2) _____ Drift Deposits (B3) _____ Algal Mat or Crust (B4) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Sparsely Vegetated Concave Surface (B8)	_____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13) _____ Marl Deposits (B15) _____ Hydrogen Sulfide Odor (C1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Presence of Reduced Iron (C4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Thin Muck Surface (C7) _____ Other (Explain in Remarks)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Pockets of standing water present throughout wetland. Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase046f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus nigra</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>10</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>50</u> = Total Cover				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>10</u>	x 1 =	<u>10</u>	
FACW species	<u>89.5</u>	x 2 =	<u>179</u>	
FAC species	<u>10</u>	x 3 =	<u>30</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>109.5</u>	(A)	<u>219</u>	(B)
Prevalence Index = B/A = <u>2.00</u>				
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹				
<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata:				
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				
Wet forest community dominated by black ash. Braun-Blanquet scale used.				

SOIL

Sampling Point: wase046f_w

[illegible]



wase046f_w_E



wase046f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): MAL/ARK	
File #: wase046		Date of visit(s): 10/03/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.30664</u> Long: <u>-90.658603</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5171B, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony		WWI Class: T3K	
Field Verified: Series not verified. Soils were sandy clay throughout the profile.		Wetland Type(s): PFO - Hardwood Swamp	
		Wetland Size: 0.08	Wetland Area Impacted 0.08
Hydrology: The feature is a small saturated depression with standing water present throughout.		Vegetation: Plant Community Description(s): The herbaceous layer is relatively sparse with cover of Carex crinita and Dryopteris intermedia. The tree cover is composed of Fraxinus nigra and Betula alleghaniensis. There is a sparse shrub stratum present containing Fraxinus nigra and Acer rubrum.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	Y	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	Y	Y	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-7: feature provides songbird habitat
WH-10, FA-2: currently supports standing water
SP-1: associated with a perennial stream

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Songbirds, amphibians

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
X			H	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
X	X		M	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The feature, as well as the margins, shows earthworm activity. The wetland is impacted by historic logging and roadways.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat	✓				
Fish and Aquatic Life Habitat		✓			
Shoreline Protection		✓			
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Plant community is disturbed with moderate overall diversity
Human Use Values	Feature not visible to the public and is likely not accessible or used for research or recreation
Wildlife Habitat	Herbaceous vegetation and tree cover is sparse, feature supports aquatic species including amphibians as well as terrestrial habitat for species including songbirds
Fish and Aquatic Life Habitat	Feature potentially provides standing water, connected to perennial stream
Shoreline Protection	Associated with perennial stream
Flood and Stormwater Storage	Area receives small quantities of runoff and is not densely vegetated
Water Quality Protection	Sparsely vegetated feature, connected to perennial stream
Groundwater Processes	Feature is saturated and fed by precipitation and runoff

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-03
 Applicant/Owner: Enbridge State: WI Sampling Point: wase045_u
 Investigator(s): NTT/ARK/MAL Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305798 Long: -90.658621 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Upland point collected in a mesic hardwood forest with an interrupted canopy. Sample point is shared with wetland wase046f.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No wetland hydrology indicators were observed.</u>		

VEGETATION – Use scientific names of plants.

Sampling Point: wase045_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)														
2. <u><i>Tsuga canadensis</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>67.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>22.5</u></td> <td>x 2 = <u>45</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>77.5</u></td> <td>x 4 = <u>310</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>445</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.42</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>22.5</u>	x 2 = <u>45</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>77.5</u>	x 4 = <u>310</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>445</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>22.5</u>	x 2 = <u>45</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>77.5</u>	x 4 = <u>310</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>445</u> (B)																	
<u>30</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Abies balsamea</i></u>	<u>25</u>	<u>Y</u>	<u>FAC</u>															
2. <u><i>Acer saccharum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Fraxinus nigra</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Rubus pubescens</i></u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
3. <u><i>Dryopteris intermedia</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Acer saccharum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>32.5</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Canopy dominated by sugar maple and hemlock with scattered balsam fir . Relatively bare ground layer. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wase045_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Soils meet hydric indicator F21; however, landscape position and dominant vegetation not indicative of wetland.



wase045_u_E



wase045_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase026f_w
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305640 Long: -90.657696 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: R4SBC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
Wet-mesic, forested floodplain of small perennial stream, with inputs from discharge slopes.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: Seasonally saturated. Discharge from groundwater occurs on some footslopes.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase026f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus pennsylvanica</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.43</u> (A/B)														
2. <u>Fraxinus nigra</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Abies balsamea</u>	<u>15</u>	<u>N</u>	<u>FAC</u>															
4. <u>Betula alleghaniensis</u>	<u>15</u>	<u>N</u>	<u>FAC</u>															
5. <u>Ulmus americana</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
			<u>85</u> = Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>42</u></td> <td>x 3 = <u>126</u></td> </tr> <tr> <td>FACU species <u>27</u></td> <td>x 4 = <u>108</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>154</u> (A)</td> <td><u>384</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.49</u>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>42</u>	x 3 = <u>126</u>	FACU species <u>27</u>	x 4 = <u>108</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>154</u> (A)	<u>384</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>20</u>	x 1 = <u>20</u>																	
FACW species <u>65</u>	x 2 = <u>130</u>																	
FAC species <u>42</u>	x 3 = <u>126</u>																	
FACU species <u>27</u>	x 4 = <u>108</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>154</u> (A)	<u>384</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Acer saccharum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Alnus incana</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Prunus serotina</u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
			<u>12</u> = Total Cover															
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex gracillima</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Glyceria striata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>															
3. <u>Carex crinita</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>															
4. <u>Dryopteris intermedia</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. <u>Equisetum sylvaticum</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
6. <u>Athyrium angustum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
7. <u>Carex projecta</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
			<u>57</u> = Total Cover															
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
			<u>0</u> = Total Cover															
Remarks: (Include photo numbers here or on a separate sheet.) Sample plot is representative of the feature.																		

SOIL

Sampling Point: wase026f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Mucky loam grading to loamy sand.



wase026f_w_N



wase026f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION							
Project name: Line 5 Relocation Project		Evaluator(s): KDF/ARK					
File #: wase026		Date of visit(s): 09/28/2019					
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest					
Lat: <u>46.305673</u> Long: <u>-90.657575</u>		Watershed: LS14, Upper Bad River					
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>							
SITE DESCRIPTION							
Soils: Mapped Type(s): 5172C Gogebic, very stony-Pence, very stony-Cathro complex, 5171B Tula-Wormet-Gogebic complex Field Verified: Series not verified. Soils were a mucky loam grading to loamy sand.		WWI Class: T3K Wetland Type(s): PFO - hardwood swamp					
Hydrology: The hydrologic regime is seasonally saturated with recharge hydrology.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Wetland Size: 0.29</td> <td style="padding: 5px;">Wetland Area Impacted 0.29</td> </tr> <tr> <td colspan="2" style="padding: 5px;"> Vegetation: Plant Community Description(s): The canopy is dominated by <i>Betula alleghaniensis</i>, <i>Fraxinus nigra</i>, and <i>Abies balsamea</i>. <i>Alnus incana</i> and <i>Fraxinus nigra</i> dominate the shrub layer. <i>Carex</i> <i>gracillima</i> dominates the herbaceous layer. </td> </tr> </table>		Wetland Size: 0.29	Wetland Area Impacted 0.29	Vegetation: Plant Community Description(s): The canopy is dominated by <i>Betula alleghaniensis</i> , <i>Fraxinus nigra</i> , and <i>Abies balsamea</i> . <i>Alnus incana</i> and <i>Fraxinus nigra</i> dominate the shrub layer. <i>Carex</i> <i>gracillima</i> dominates the herbaceous layer.	
Wetland Size: 0.29	Wetland Area Impacted 0.29						
Vegetation: Plant Community Description(s): The canopy is dominated by <i>Betula alleghaniensis</i> , <i>Fraxinus nigra</i> , and <i>Abies balsamea</i> . <i>Alnus incana</i> and <i>Fraxinus nigra</i> dominate the shrub layer. <i>Carex</i> <i>gracillima</i> dominates the herbaceous layer.							

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	Y	Y	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

HU-4: some degradation due to earthworm activity and historic logging
WQ-5: some areas of wetland are densely vegetated but other areas are sparsely vegetated
SP-2: some evidence of erosion along bank of small stream but densely rooted vegetation is present, stream can not support recreational activities that would cause further erosion

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

[illegible]

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

[illegible]

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The vegetation is comprised of native species expected within the plant community, with no observable invasive species.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		L	U	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	U	Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
	X		L	U	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland and surrounding area is primarily influenced by earthworm activity resulting in degradation of the herbaceous vegetation. Previous logging activity likely occurred evidenced by young growth trees. An ATV trail is located within the utility corridor nearby.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection		✓			
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	Native species, no invasives, apparent degradation of herbaceous layer due to earthworm activity
Human Use Values	Private land, limited accessibility
Wildlife Habitat	Multiple strata represented, potential for standing water and located alongside a stream
Fish and Aquatic Life Habitat	Potential standing water may support aquatic invertebrates but not fish
Shoreline Protection	Densely rooted trees along the stream, some evidence of erosion
Flood and Stormwater Storage	Closed basin with dense vegetation. The wetland has potential to store and filter water from the associated stream
Water Quality Protection	See above, associated with stream
Groundwater Processes	Recharge hydrology, seeps present

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wase026_u
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305475 Long: -90.657556 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Mesic forest located on a footslope.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6</u> Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed. The water table was observed at 6 inches below surface, however this follows heavy rains.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase026_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus rubra</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.00</u> (A/B)																
2. <u>Acer saccharum</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>																	
3. <u>Tilia americana</u>	<u>15</u>	<u>N</u>	<u>FACU</u>																	
4. <u>Thuja occidentalis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>																	
5. _____																				
6. _____																				
7. _____																				
<u>120</u> = Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>11</u></td> <td>x 3 = <u>33</u></td> </tr> <tr> <td>FACU species <u>125</u></td> <td>x 4 = <u>500</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>141</u> (A)</td> <td><u>543</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.85</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>11</u>	x 3 = <u>33</u>	FACU species <u>125</u>	x 4 = <u>500</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>141</u> (A)	<u>543</u> (B)	Prevalence Index = B/A = <u>3.85</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>11</u>	x 3 = <u>33</u>																			
FACU species <u>125</u>	x 4 = <u>500</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>141</u> (A)	<u>543</u> (B)																			
Prevalence Index = B/A = <u>3.85</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
<u>0</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Mitchella repens</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Athyrium angustum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																	
3. <u>Carex pedunculata</u>	<u>1</u>	<u>N</u>	<u>FAC</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
<u>21</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____																				
3. _____																				
4. _____																				
<u>0</u> = Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.) Mesic forest plants.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>																

SOIL

Sampling Point: wase026_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No indicators of hydric soils were observed.



wase026_u_S



wase026_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase025e_w1
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304858 Long: -90.655531 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet meadow in a utility corridor. Part of a wetland complex that includes forested wetland.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Seasonally saturated recharge wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase025e_w1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Rubus idaeus</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>95</u></td> <td>x 1 = <u>95</u></td> </tr> <tr> <td>FACW species <u>19</u></td> <td>x 2 = <u>38</u></td> </tr> <tr> <td>FAC species <u>16</u></td> <td>x 3 = <u>48</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>181</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.39</u>	Total % Cover of:	Multiply by:	OBL species <u>95</u>	x 1 = <u>95</u>	FACW species <u>19</u>	x 2 = <u>38</u>	FAC species <u>16</u>	x 3 = <u>48</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>181</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>95</u>	x 1 = <u>95</u>																	
FACW species <u>19</u>	x 2 = <u>38</u>																	
FAC species <u>16</u>	x 3 = <u>48</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>181</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>15</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Scirpus cyperinus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Calamagrostis canadensis</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>															
3. <u>Phalaris arundinacea</u>	<u>10</u>	<u>N</u>	<u>FACW</u>															
4. <u>Mentha arvensis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
5. <u>Eutrochium maculatum</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
6. <u>Juncus effusus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
7. <u>Solidago gigantea</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
8. <u>Doellingeria umbellata</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
9. <u>Athyrium angustum</u>	<u>1</u>	<u>N</u>	<u>FAC</u>															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>115</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Sample plot is representative of the feature.																		

SOIL

Sampling Point: wase025e_w1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Loam with redox.



wase025e_w1_NW



wase025e_w1_SE

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wase025e_w2
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305575 Long: -90.656543 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet meadow in a utility corridor. Further disturbance from an ATV trail.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Seasonally saturated wetland associated with a perennial stream.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase025e_w2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>97</u></td> <td>x 2 = <u>194</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>109</u> (A)</td> <td><u>216</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.98</u>	Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>97</u>	x 2 = <u>194</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>109</u> (A)	<u>216</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>7</u>	x 1 = <u>7</u>																	
FACW species <u>97</u>	x 2 = <u>194</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>109</u> (A)	<u>216</u> (B)																	
<u>5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Rubus idaeus</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Phalaris arundinacea</u>	<u>90</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Glyceria canadensis</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
3. <u>Verbena hastata</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
4. <u>Scirpus cyperinus</u>	<u>2</u>	<u>N</u>	<u>OBL</u>															
5. <u>Onoclea sensibilis</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
6. <u>Solidago gigantea</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
7. <u>Lysimachia ciliata</u>	<u>1</u>	<u>N</u>	<u>FACW</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>104</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Sample plot is representative of the feature.																		

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No _____

SOIL

Sampling Point: wase025e_w2

[illegible]



wase025e_w2_N



wase025e_w2_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-27
 Applicant/Owner: Enbridge State: WI Sampling Point: wase025f_w
 Investigator(s): ARK/KDG Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304806 Long: -90.654797 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Young stand of trees in a disturbed wetland. Part of a complex including more mature forested wetland along perennial stream sase014p, and emergent wetland in a utility corridor. Associated with upland point wase024_u.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Seasonally saturated wetland, partially driven by groundwater discharge. The portion that borders perennial stream sase014p is inundated after heavy rain.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase025f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Populus tremuloides</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Betula papyrifera</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>55</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Rubus idaeus</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>77</u></td> <td>x 3 = <u>231</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>169</u> (A)</td> <td><u>385</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.28</u>	Total % Cover of:	Multiply by:	OBL species <u>70</u>	x 1 = <u>70</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>77</u>	x 3 = <u>231</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>169</u> (A)	<u>385</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>70</u>	x 1 = <u>70</u>																	
FACW species <u>2</u>	x 2 = <u>4</u>																	
FAC species <u>77</u>	x 3 = <u>231</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>169</u> (A)	<u>385</u> (B)																	
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Quercus rubra</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u>Corylus cornuta</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>35</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Calamagrostis canadensis</u>	<u>65</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>															
3. <u>Solidago altissima</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u>Doellingeria umbellata</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
5. <u>Athyrium angustum</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>79</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Black ash and fringed sedge are more prevalent elsewhere in the wetland.																		

SOIL

Sampling Point: wase025f_w

[illegible]



wase025f_w_N



wase025f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): KDF/ARK	
File #: wase025		Date of visit(s): 09/27/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.30484</u> Long: <u>-90.654852</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5171B Tula-Wormet-Gogebic complex, 5172C Gogebic, very stony-Pence, very stony-Cathro complex Field Verified: Series not verified. In the forested component soils were a muck over mucky mineral. In the emergent component soils were a clay loam over sandy clay loam, as well as a sandy loam over sandy clay loam.		WWI Class: S3/E1K, T3K	
		Wetland Type(s): PFO/PEM - hardwood swamp/fresh wet meadow	
		Wetland Size: 1.89	Wetland Area Impacted 1.89
Hydrology: The hydrologic regime is saturated with recharge hydrology.		Vegetation: Plant Community Description(s): Within the forested component, Populus tremuloides and Fraxinus nigra dominate the tree and shrub layers. Glyceria canadensis, Scirpus cyperinus, Carex crinita, and Calamagrostis canadensis dominate the herbaceous layer. Within the two emergent components, Scirpus cyperinus, Calamagrostis canadensis, Phalaris arundinacea, and Solidago canadensis dominate the herbaceous layer.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting, birding
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	Y	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	Y	Y	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	Y	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	Y	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	Y	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located on private land, ATV trail located nearby
WH-6: PEM/PFO wetland complex, associated with stream
FA-2: shallow pockets of water present within the PFO
WQ-1: closed basin, dense vegetation
GW-4: soils in the forested peatland component are organic

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	Avian
	Y	Herpetofauna, mammals, insects

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

SECTION 2: Floristic Integrity

Plant Community Integrity (circle)*

	Low	Medium	High	Exceptional
Invasive species cover	> 50% <input type="checkbox"/>	20-50% <input checked="" type="checkbox"/>	10-20% <input type="checkbox"/>	<10% <input type="checkbox"/>
Strata	Missing stratum(a) <input type="checkbox"/> or bare due to invasive species	All strata present but reduced native species <input type="checkbox"/>	All strata present and good assemblage of native species <input checked="" type="checkbox"/>	All strata present, conservative species represented <input type="checkbox"/>
NHI plant community ranking	S4 <input type="checkbox"/>	S3 <input checked="" type="checkbox"/>	S2 <input type="checkbox"/>	S1-S2 (S2 high quality) <input type="checkbox"/>
Relative frequency of plant community in watershed	Abundant <input type="checkbox"/>	Common <input checked="" type="checkbox"/>	Uncommon <input type="checkbox"/>	Rare <input type="checkbox"/>
FQI (optional)	<13 <input type="checkbox"/>	13-23 <input type="checkbox"/>	23-32 <input type="checkbox"/>	>32 <input type="checkbox"/>
Mean C (optional)	<2.4 <input type="checkbox"/>	2.4-4.2 <input type="checkbox"/>	4.3-4.7 <input type="checkbox"/>	>4.7 <input type="checkbox"/>

*Note: separate plant communities are described independently

Plant Species List (* dominant species) attach list of additional species

Scientific Name	Common Name	C of C	Plant communities	Comments (Estimate of % Cover, Abundance)
Populus tremuloides			PFO	Abundant
Betula papyrifera			PFO	Uncommon
Rubus idaeus			PFO, PEM	Common
Acer rubrum			PFO	Common
Quercus rubra			PFO	Uncommon
Corylus cornuta			PFO	Uncommon
Calamagrostis canadensis			PFO, PEM	Abundant
Scirpus cyperinus			PFO, PEM	Abundant
Solidago altissima			PFO	Uncommon
Doellingeria umbellata			PFO, PEM	Uncommon
Athyrium angustum			PFO, PEM	Uncommon
Phalaris arundinacea			PEM	Abundant
Mentha arvensis			PEM	Uncommon
Eutrochium maculatum			PEM	Uncommon
Juncus effusus			PEM	Uncommon
Solidago gigantea			PEM	Uncommon
Glyceria canadensis			PEM	Uncommon
Verbena hastata			PEM	Uncommon
Onoclea sensibilis			PEM	Uncommon
Lysimachia ciliata			PEM	Uncommon

SUMMARY OF FLORISTIC INTEGRITY (Include general comments on plant communities)

The vegetation within the forested component is comprised of native species. The two emergent components are filled with disturbed species, and Phalaris arundinacea is very common.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
	X				Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
	X		L	C	Agriculture – hay
					Agriculture – pasture
	X		L	C	Roads or railroad
X	X		H	U	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		H	C	Cover of non-native and/or invasive species
	X		L	U	Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
	X		L	U	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland and surrounding area is primarily influenced by a utility corridor that runs above the PEM. The surrounding area is also influenced by an ATV trail nearby. Invasive species are present in the utility corridor.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values		✓			
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat		✓			
Shoreline Protection		✓			
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	Somewhat diverse assemblage of native plant species, but the utility corridor is disturbed and reed canary grass is problematic
Human Use Values	High aesthetic but no public access to private land. Private landowners may use for hunting or other uses
Wildlife Habitat	Multiple strata, diverse habitats (PEM/PFO complex), shallow standing water present within PFO
Fish and Aquatic Life Habitat	Shallow standing water to support aquatic invertebrates, would not support fish. The wetland is associated with a perennial stream
Shoreline Protection	Densely rooted vegetation
Flood and Stormwater Storage	Closed basin, dense vegetation
Water Quality Protection	See above, vegetation associated with stream
Groundwater Processes	Recharge hydrology, springs and seeps present

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wase024_u
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Crest Local relief (concave, convex, none): Convex Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304632 Long: -90.654149 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: PFO2Bg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
Mesic forest location, on a ridge separating two wetlands. This upland point is shared with wetland wase025.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase024_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Tsuga canadensis</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)														
2. <u><i>Abies balsamea</i></u>	<u>30</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Acer saccharum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u><i>Populus tremuloides</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>90</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>52</u></td> <td>x 3 = <u>156</u></td> </tr> <tr> <td>FACU species <u>81</u></td> <td>x 4 = <u>324</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>133</u> (A)</td> <td><u>480</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.61</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>52</u>	x 3 = <u>156</u>	FACU species <u>81</u>	x 4 = <u>324</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>133</u> (A)	<u>480</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>52</u>	x 3 = <u>156</u>																	
FACU species <u>81</u>	x 4 = <u>324</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>133</u> (A)	<u>480</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Acer rubrum</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Pteridium aquilinum</i></u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u><i>Clintonia borealis</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Dendrolycopodium dendroideum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u><i>Cornus canadensis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
5. <u><i>Maianthemum canadense</i></u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>38</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic forest plants.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wase024_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No indicators of hydric soils were observed.



wase024_u_N



wase024_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wase025_u2
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305463 Long: -90.656394 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Herbaceous vegetation in a utility corridor. Further disturbance by an ATV trail.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No indicators of wetland hydrology were observed.</u>		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase025_u2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.14</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>46</u></td> <td>x 4 = <u>184</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>86</u> (A)</td> <td><u>254</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.95</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>46</u>	x 4 = <u>184</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>86</u> (A)	<u>254</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>46</u>	x 4 = <u>184</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>86</u> (A)	<u>254</u> (B)																	
<u>1</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Pinus strobus</u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>1</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Fragaria virginiana</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Poa pratensis</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Solidago altissima</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Solidago gigantea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
5. <u>Agrostis gigantea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
6. <u>Calamagrostis canadensis</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>															
7. <u>Phalaris arundinacea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
8. <u>Phleum pratense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>85</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation in this region frequently passes hydrophytic tests where soils are disturbed/compacted.																		

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No _____

SOIL

Sampling Point: wase025_u2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No indicators of hydric soils were observed.



wase025_u2_E



wase025_u2_N

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase028f_w
 Investigator(s): ARK/KDG Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304428 Long: -90.656183 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Hardwood swamp depression located within a mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Seasonally saturated recharge wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase028f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus pennsylvanica</u>	<u>45</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>87.50</u> (A/B)														
2. <u>Acer rubrum</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Ulmus americana</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Betula alleghaniensis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>107</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>84</u></td> <td>x 2 = <u>168</u></td> </tr> <tr> <td>FAC species <u>41</u></td> <td>x 3 = <u>123</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>326</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.25</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>84</u>	x 2 = <u>168</u>	FAC species <u>41</u>	x 3 = <u>123</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>326</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>84</u>	x 2 = <u>168</u>																	
FAC species <u>41</u>	x 3 = <u>123</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>145</u> (A)	<u>326</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Tilia americana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Glyceria striata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Carex intumescens</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Iris versicolor</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
4. <u>Carex cristatella</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
5. <u>Carex projecta</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
6. <u>Onoclea sensibilis</u>	<u>2</u>	<u>N</u>	<u>FACW</u>															
7. <u>Dryopteris intermedia</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
8. <u>Osmunda claytoniana</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>33</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Sample plot is representative of the feature.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wase028f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☒ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Loam with redox.



wase028f_w_E



wase028f_w_S

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION							
Project name: Line 5 Relocation Project		Evaluator(s): KDF/ARK					
File #: wase028		Date of visit(s): 09/28/2019					
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest					
Lat: <u>46.304428</u> Long: <u>-90.656107</u>		Watershed: LS14, Upper Bad River					
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>							
SITE DESCRIPTION							
Soils: Mapped Type(s): 5172C Gogebic, very stony-Pence, very stony-Cathro complex, 5171B Tula-Wormet-Gogebic complex Field Verified: Series not verified. Soils were a sandy clay loam over a clay loam.		WWI Class: N/A Wetland Type(s): PFO - hardwood swamp					
Hydrology: The hydrologic regime is seasonally saturated with recharge hydrology.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Wetland Size: 0.06</td> <td style="padding: 5px;">Wetland Area Impacted 0.06</td> </tr> <tr> <td colspan="2" style="padding: 5px;"> Vegetation: Plant Community Description(s): The canopy is dominated by Fraxinus nigra and Acer rubrum. The shrub layer is dominated by Fraxinus nigra and Tilia americana. Glyceria striata and Carex intumescens dominate the herbaceous layer. </td> </tr> </table>		Wetland Size: 0.06	Wetland Area Impacted 0.06	Vegetation: Plant Community Description(s): The canopy is dominated by Fraxinus nigra and Acer rubrum. The shrub layer is dominated by Fraxinus nigra and Tilia americana. Glyceria striata and Carex intumescens dominate the herbaceous layer.	
Wetland Size: 0.06	Wetland Area Impacted 0.06						
Vegetation: Plant Community Description(s): The canopy is dominated by Fraxinus nigra and Acer rubrum. The shrub layer is dominated by Fraxinus nigra and Tilia americana. Glyceria striata and Carex intumescens dominate the herbaceous layer.							

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	N	N	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	N	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-4: area is aesthetically pleasing but degraded by earthworm activity
WH-6: located near a wetland complex but separated by upland area
WH-9: seasonally saturated with potential for ponding
ST-3: degradation of herbaceous layer due to earthworm activity resulting in less dense vegetation cover

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Avian, herpetofauna, mammals, insects

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The vegetation is comprised of native species expected within the plant community, with no observable invasive species present.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		L	U	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is primarily impacted by earthworm activity removing herbaceous vegetation. A utility corridor is present outside of the wetland area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Native species, no invasives
Human Use Values	No recreational activities, private land with no public accessibility
Wildlife Habitat	Multiple strata represented, part of large habitat block
Fish and Aquatic Life Habitat	Potential standing water that could support aquatic invertebrates but would not support fish
Shoreline Protection	
Flood and Stormwater Storage	Closed basin but not densely vegetated
Water Quality Protection	See above
Groundwater Processes	Recharge hydrology

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wase028_u
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): None Slope (%): 3-7%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304715 Long: -90.656288 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase028_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharum</u>	<u>45</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.00</u> (A/B)														
2. <u>Ostrya virginiana</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Abies balsamea</u>	<u>20</u>	<u>N</u>	<u>FAC</u>															
4. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. <u>Betula alleghaniensis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>115</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>42</u></td> <td>x 3 = <u>126</u></td> </tr> <tr> <td>FACU species <u>96</u></td> <td>x 4 = <u>384</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>138</u> (A)</td> <td><u>510</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.70</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>42</u>	x 3 = <u>126</u>	FACU species <u>96</u>	x 4 = <u>384</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>138</u> (A)	<u>510</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>42</u>	x 3 = <u>126</u>																	
FACU species <u>96</u>	x 4 = <u>384</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>138</u> (A)	<u>510</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Tilia americana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Prunus serotina</u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
3. <u>Quercus rubra</u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
<u>8</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex pedunculata</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Athyrium angustum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Dryopteris intermedia</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
4. <u>Pyrola elliptica</u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
5. <u>Solidago flexicaulis</u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>15</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Upland forest plants.																		

SOIL

Sampling Point: wase028_u

[illegible]



wase028_u_N



wase028_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-27
 Applicant/Owner: Enbridge State: WI Sampling Point: wase024f_w
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304679 Long: -90.653930 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: PFO2Bg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Peatland dominated by tall and low shrubs, with conifer trees competing. Surrounded by mixed conifer-hardwoods.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: Saturated recharge wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase024f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																																															
1. <u><i>Picea mariana</i></u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)																																																																																																																																														
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UPL species	<u>0</u>	x 5 =	<u>0</u>																																																																																																																																															
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<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)																																																																																																																																																		
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																																																																																																																																																		
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Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.																																																																																																																																																		
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.																																																																																																																																																		
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Hydrophytic Vegetation Present? Yes <u>✓</u> No <u> </u>																																																																																																																																																		
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SOIL

Sampling Point: wase024f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input checked="" type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Peat over muck and mucky mineral soil.



wase024f_w_E



wase024f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): KDF/ARK	
File #: wase024		Date of visit(s): 09/27/2019	
Location: PLSS: <u>044N-002W-07</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.304548</u> Long: <u>-90.65406</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5171B Tula-Wormet-Gogebic complex		WWI Class: T3/S3K	
Field Verified: Series not verified. Series were a peat over muck over mucky mineral.		Wetland Type(s): PFO - coniferous swamp	
		Wetland Size: 0.58	Wetland Area Impacted 0.58
Hydrology: The hydrologic regime is saturated with recharge hydrology.		Vegetation: Plant Community Description(s): The canopy is dominated by <i>Picea mariana</i> , <i>Betula alleghaniensis</i> , <i>Larix laricina</i> . <i>Betula alleghaniensis</i> , <i>Chamaedaphne calyculata</i> , and <i>Rhododendron groenlandicum</i> dominate the shrub layer. <i>Iris versicolor</i> dominates the herbaceous layer. There is a dense mat of <i>Sphagnum</i> sp. present throughout the wetland.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Birding
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	Y	Y	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	Y	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	N	N	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	N	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	Y	Y	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	Y	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	Y	Y	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	Y	Y	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	Y	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: part of wetland is visible from public roadway but is located on private land
WH-10: standing water may be present after precipitation events
ST-3: dense vegetation present, including mat of Sphagnum sp.

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	Herpetofauna, mammals, insects
Y	Y	Avian

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The vegetation is comprised of native vegetation with no observable invasive species. The community seems relatively intact.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
X	X		M	C	Point source or stormwater discharge
X	X		L	U	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
X	X		M	C	Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland and surrounding area is primarily impacted by a roadway and the associated polluted runoff.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity			✓		
Human Use Values		✓			
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage			✓		
Water Quality Protection			✓		
Groundwater Processes			✓		

FUNCTION	RATIONALE
Floristic Integrity	Diverse vegetation, native species, no invasives, uncommon plant community
Human Use Values	High aesthetic, visible from public road, limited access to private land
Wildlife Habitat	Multiple strata represented
Fish and Aquatic Life Habitat	Potential for shallow standing water pools to support aquatic invertebrates, would not support fish
Shoreline Protection	
Flood and Stormwater Storage	Closed basin, dense vegetation that collects stormwater runoff from the associated road
Water Quality Protection	See above
Groundwater Processes	Seeps present, recharge hydrology

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-30
 Applicant/Owner: Enbridge State: WI Sampling Point: wase024_u
 Investigator(s): ARK/KDF Section, Township, Range: 044N-002W-07
 Landform (hillslope, terrace, etc.): Crest Local relief (concave, convex, none): Convex Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304632 Long: -90.654149 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: PFO2Bg

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
Mesic forest location, on a ridge separating two wetlands. This upland point is shared with wetland wase025.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase024_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Tsuga canadensis</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)														
2. <u><i>Abies balsamea</i></u>	<u>30</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Acer saccharum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u><i>Populus tremuloides</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>90</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>52</u></td> <td>x 3 = <u>156</u></td> </tr> <tr> <td>FACU species <u>81</u></td> <td>x 4 = <u>324</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>133</u> (A)</td> <td><u>480</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.61</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>52</u>	x 3 = <u>156</u>	FACU species <u>81</u>	x 4 = <u>324</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>133</u> (A)	<u>480</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>52</u>	x 3 = <u>156</u>																	
FACU species <u>81</u>	x 4 = <u>324</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>133</u> (A)	<u>480</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Acer rubrum</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Pteridium aquilinum</i></u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u><i>Clintonia borealis</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Dendrolycopodium dendroideum</i></u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u><i>Cornus canadensis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
5. <u><i>Maianthemum canadense</i></u>	<u>1</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>38</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic forest plants.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wase024_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No indicators of hydric soils were observed.



wase024_u_N



wase024_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase069f_w
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305365 Long: -90.651847 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Small depressional wet forest feature.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase069f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus nigra</u>	<u>37.5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>47.5</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ilex verticillata</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>47.5</u> x 2 = <u>95</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>87.5</u> (A) <u>155</u> (B) Prevalence Index = B/A = <u>1.77</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>5</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Glyceria striata</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Carex crinita</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3. <u>Rubus pubescens</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0.0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Small black ash depression. Braun-Blanquet scale used.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: wase069f_w

[illegible]



wase069f_w_N



wase069f_w_W

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): NTT/ARK	
File #: wase069	Date of visit(s): 10/05/2019	
Location: PLSS: <u>044N-002W-08</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.305358</u> Long: <u>-90.651971</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 5172C, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were silty clay loam above sandy clay above silt clay.	WWI Class: N/A	
	Wetland Type(s): PFO - hardwood swamp	
	Wetland Size: 0.02	Wetland Area Impacted 0.02
Hydrology: The feature is a small depressional wetland with a saturated hydrologic regime.	Vegetation: Plant Community Description(s): The wetland is a hardwood swamp located in basin depression impacted by logging. The canopy is dominated by Fraxinus nigra, with ground cover dominated by Glyceria striata.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located nearby an old logging road with a logged area
ST-1: basin wetland located within a heavily logged forest
WH-2: multiple strata represented, dominated by *Fraxinus nigra* with *Ilex verticillata* present within the shrub layer
WH-8: located in a large forested block

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The wetland has been heavily logged. *Fraxinus nigra* and *Acer rubrum* are present throughout.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	H	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		M	C	Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
X	X		H	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is located in a logged forest with old logging roads present throughout.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Low diversity, disturbed due to logging
Human Use Values	Located in a logged forest, potential for recreational hunting
Wildlife Habitat	Part of a large forested block with potential for multiple species habitat
Fish and Aquatic Life Habitat	Potential for pockets of standing water throughout the wetland
Shoreline Protection	N/A
Flood and Stormwater Storage	Small basin wetland
Water Quality Protection	Sparse vegetation within wetland
Groundwater Processes	Majority of input is from rain water

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase068_u
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305411 Long: -90.651482 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sample recorded in an opening within a mesic hardwood system. Sample serves as a shared upland data point for wetland feature wase069f.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase068_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33</u> (A/B)														
2. <u><i>Picea glauca</i></u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>27.5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Fraxinus nigra</i></u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>72</u></td> <td>x 4 = <u>288</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>109</u> (A)</td> <td><u>384</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.52</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>72</u>	x 4 = <u>288</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>109</u> (A)	<u>384</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>15</u>	x 2 = <u>30</u>																	
FAC species <u>22</u>	x 3 = <u>66</u>																	
FACU species <u>72</u>	x 4 = <u>288</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>109</u> (A)	<u>384</u> (B)																	
2. <u><i>Prunus serotina</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
3. <u><i>Alnus incana</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Solidago canadensis</i></u>	<u>37.5</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Symphotrichum lateriflorum</i></u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
3. <u><i>Rubus idaeus</i></u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. <u><i>Trientalis borealis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
5. <u><i>Fragaria virginiana</i></u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>61.5</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Sparse to interrupted canopy with Canada goldenrod in the immediate area. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wase068_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators were observed.



wase068_u_E



wase068_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase067f1_w
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304854 Long: -90.652970 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Data point not representative of the community as a whole. Cedar is more prevalent on the boundary of the wetland with tamarack in the interior. Community is a forested peatland/coniferous swamp.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) _____ Water Marks (B1) _____ Sediment Deposits (B2) _____ Drift Deposits (B3) _____ Algal Mat or Crust (B4) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Sparsely Vegetated Concave Surface (B8)	_____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13) _____ Marl Deposits (B15) _____ Hydrogen Sulfide Odor (C1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Presence of Reduced Iron (C4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Thin Muck Surface (C7) _____ Other (Explain in Remarks)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Standing pools of water throughout the wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase067f1_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Thuja occidentalis</i></u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>10</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u><i>Larix laricina</i></u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. <u><i>Betula alleghaniensis</i></u>	<u>17.5</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>92.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>102.5</u></td> <td>x 2 = <u>205</u></td> </tr> <tr> <td>FAC species <u>37.5</u></td> <td>x 3 = <u>112.5</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>332.5</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.15</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>102.5</u>	x 2 = <u>205</u>	FAC species <u>37.5</u>	x 3 = <u>112.5</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>332.5</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>102.5</u>	x 2 = <u>205</u>																	
FAC species <u>37.5</u>	x 3 = <u>112.5</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>155</u> (A)	<u>332.5</u> (B)																	
<u>27.5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Ilex verticillata</i></u>	<u>17.5</u>	<u>Y</u>	<u>FACW</u>															
2. <u><i>Abies balsamea</i></u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>27.5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Rhododendron groenlandicum</i></u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Vaccinium myrtilloides</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
3. <u><i>Matteuccia struthiopteris</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
4. <u><i>Carex disperma</i></u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
5. <u><i>Trientalis borealis</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
6. <u><i>Coptis trifolia</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>35</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) Canopy dominated by tamarack and cedar. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wase067f1_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☒ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)

- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Black muck soils.



wase067f1_w_E



wase067f1_w_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase067f2_w
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305013 Long: -90.650448 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest component of a larger wetland complex with coniferous cover further west.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase067f2_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)														
2. <u>Acer saccharum</u>	<u>10</u>	<u>N</u>	<u>FACU</u>															
3. <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>70</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>240</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.29</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>240</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>60</u>	x 2 = <u>120</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>240</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
1. <u>Glyceria striata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Matteuccia struthiopteris</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Equisetum pratense</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Carex crinita</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
5. <u>Fraxinus nigra</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
6. <u>Acer saccharum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>35</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Wet forest dominated by black ash. Braun-Blanquet scale used.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wase067f2_w

[illegible]



wase067f2_w_N



wase067f2_w_S

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): NTT/ARK	
File #: wase067		Date of visit(s): 10/05/2019	
Location: PLSS: <u>044N-002W-08</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.304743</u> Long: <u>-90.652747</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5171B, 5172C, Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Within the hardwood swamp component, soils were mucky mineral above clay. Within the coniferous swamp component, soils were muck throughout the profile.		WWI Class: T3K, T3/S3K Wetland Type(s): PFO - hardwood swamp, PFO - coniferous swamp	
		Wetland Size: 3.40	Wetland Area Impacted 3.40
Hydrology: The hydrologic regime is saturated, and standing water is present throughout areas of the wetland. The feature is associated with an ephemeral stream.		Vegetation: Plant Community Description(s): The wetland is comprised of multiple forested plant communities. The hardwood swamp component is dominated by <i>Fraxinus nigra</i> . The coniferous swamp is dominated by <i>Larix laricina</i> and <i>Thuja occidentalis</i> , with a ground layer covered in moss and scattered fern.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	Y	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	Y	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	Y	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located along a gravel roadway
WH-8: located in a large forested block
WQ-4: associated with an ephemeral stream
ST-5: potentially receives runoff from the adjacent road to the west of the feature
GW-4: layer of muck present within the coniferous swamp component of the wetland

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

WDNR WRAM v.2 data form - 4

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
X	X		M	C	Point source or stormwater discharge
X	X		M	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
X	X		M	C	Roads or railroad
	X		M	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
					Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is located along a maintained gravel road and impacted by potential runoff stressors. There is a utility corridor present to the southwest of the wetland within the buffer area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat		✓			
Shoreline Protection		✓			
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Unique habitat for the region, native vegetation
Human Use Values	Located along gravel road, unlikely to be used for recreation purposes
Wildlife Habitat	Part of a large forested block with potential for multiple species habitat
Fish and Aquatic Life Habitat	Large pockets of standing water present throughout the wetland
Shoreline Protection	Associated with an ephemeral stream
Flood and Stormwater Storage	Basin wetland, large size, potentially receives runoff from adjacent roadway
Water Quality Protection	Sparse vegetation within wetland, associated with a small stream
Groundwater Processes	Majority of input is from rain water, potential for extended saturation, organic soils present

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase067f1_u
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.305074 Long: -90.652741 Datum: WGS84
 Soil Map Unit Name: Tula-Wormet-Gogebic complex, 0 to 6 percent slopes, very stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sample recorded in a mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase067f1_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																												
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Total % Cover of:		Multiply by:																																																													
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Column Totals:	<u>112</u> (A)		<u>441</u> (B)																																																												
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Remarks: (Include photo numbers here or on a separate sheet.) Mesic hardwood forest that includes hemlock in the canopy, but sugar maple is the dominant species.																																																															

SOIL

Sampling Point: wase067f1_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators were observed.



wase067f1_u_E



wase067f1_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase067f2_u
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304820 Long: -90.650163 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sample recorded in a mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase067f2_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
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<u>47.5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Quercus rubra</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>27</u></td> <td>x 3 = <u>81</u></td> </tr> <tr> <td>FACU species <u>62.5</u></td> <td>x 4 = <u>250</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>89.5</u> (A)</td> <td><u>331</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.70</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>27</u>	x 3 = <u>81</u>	FACU species <u>62.5</u>	x 4 = <u>250</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>89.5</u> (A)	<u>331</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>27</u>	x 3 = <u>81</u>																	
FACU species <u>62.5</u>	x 4 = <u>250</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>89.5</u> (A)	<u>331</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex pedunculata</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Acer saccharum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Abies balsamea</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
4. <u>Rubus idaeus</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
5. <u>Symphotrichum lateriflorum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
6. <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
7. <u>Quercus rubra</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
8. <u>Betula alleghaniensis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>37</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic hardwood forest. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wase067f2_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators observed.



wase067f2_u_E



wase067f2_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase071f_w
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304159 Long: -90.650530 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Slight depression, marginally wet and likely only with brief saturation in the spring.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase071f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Quercus rubra</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)														
2. <u>Ulmus americana</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Ulmus americana</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>200</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.50</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>200</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>45</u>	x 2 = <u>90</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>25</u>	x 4 = <u>100</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>80</u> (A)	<u>200</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex crinita</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Juncus effusus</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
3. <u>Equisetum pratense</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Onoclea sensibilis</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Feature only marginally wet.																		

SOIL

Sampling Point: wase071f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Depleted matrix with redox concentrations.



wase071f_w_NW



wase071f_w_SE

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): NTT/ARK	
File #: wase071	Date of visit(s): 10/05/2019	
Location: PLSS: <u>044N-002W-08</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.304104</u> Long: <u>-90.65059</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 5172C, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were clay loam above clay.	WWI Class: N/A	
	Wetland Type(s): PFO - Hardwood swamp	
	Wetland Size: 0.10	Wetland Area Impacted 0.10
Hydrology: The feature is located within a slight depression with a saturated hydrologic regime. The feature is marginally wet and likely saturated only briefly in the spring.	Vegetation: Plant Community Description(s): The wetland is a hardwood swamp located nearby an old logging road. The canopy is dominated by Quercus rubra and Ulmus americana, with a sparse ground cover.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WH-2: located within a hardwood swamp with three strata represented
WH-8: located in a large mesic hardwood forest
ST-1: located in a depressional basin

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	Songbirds
	Y	Whitetail deer

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

There is a sparsely vegetated ground layer covered in *Carex crinita* and *Juncus effusus*, with a canopy of *Quercus rubra* and *Ulmus americana*.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	M	C	Removal of tree or shrub strata – logging, unprescribed fire
X	X		M	C	Human trails – unpaved
					Human trails – paved
X	X		M	C	Removal of large woody debris
					Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is located within a logged area and an old logging road is present nearby.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Low invasive species cover, overall diversity is low
Human Use Values	Nearby logging activity
Wildlife Habitat	Large block of mesic hardwood forest
Fish and Aquatic Life Habitat	No standing water throughout
Shoreline Protection	N/A
Flood and Stormwater Storage	Located in a depressional basin
Water Quality Protection	Sparsely vegetated
Groundwater Processes	Recharge wetland

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase071_u
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304123 Long: -90.650734 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Upland sample point recorded in a mesic hardwood system.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wase071_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.00</u> (A/B)														
2. <u><i>Betula papyrifera</i></u>	<u>10</u>	<u>N</u>	<u>FACU</u>															
3. <u><i>Betula alleghaniensis</i></u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>70</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>135</u></td> <td>x 4 = <u>540</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>160</u> (A)</td> <td><u>615</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.84</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>135</u>	x 4 = <u>540</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>160</u> (A)	<u>615</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>135</u>	x 4 = <u>540</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>160</u> (A)	<u>615</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Acer saccharum</i></u>	<u>25</u>	<u>Y</u>	<u>FACU</u>															
2. <u><i>Abies balsamea</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>35</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Acer saccharum</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Matteuccia struthiopteris</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>55</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic hardwood forest dominated by sugar maple. Sugar maple seedlings are very common and dense, particularly where the canopy is open.				Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														

SOIL

Sampling Point: wase071_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators were observed.



wase071_u_NW



wase071_u_SE

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase070f_w
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304262 Long: -90.648118 Datum: WGS84
 Soil Map Unit Name: Wormet sandy loam, 0 to 3 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Small wet forest located in a depressional basin and surrounded by a mesic hardwood community.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: The wetland is located within a seasonally saturated basin.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase070f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>37.5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.33</u> (A/B)														
2. <u>Acer saccharum</u>	<u>10</u>	<u>N</u>	<u>FACU</u>															
3. <u>Abies balsamea</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>57.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>42.5</u></td> <td>x 2 = <u>85</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92.5</u> (A)</td> <td><u>230</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.49</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>42.5</u>	x 2 = <u>85</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92.5</u> (A)	<u>230</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>42.5</u>	x 2 = <u>85</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>15</u>	x 4 = <u>60</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>92.5</u> (A)	<u>230</u> (B)																	
<u>10</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Abies balsamea</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Acer saccharum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex crinita</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. <u>Athyrium angustum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Equisetum pratense</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>25</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland with black ash and balsam fir in the canopy. Braun-Blanquet scale used.

SOIL

Sampling Point: wase070f_w

[illegible]



wase070f_w_NE



wase070f_w_SW

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): NTT/ARK	
File #: wase070	Date of visit(s): 10/05/2019	
Location: PLSS: <u>044N-002W-08</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.303151</u> Long: <u>-90.648909</u>	Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 815A, 5172C, Wormet sandy loam, 0 to 3 percent slopes, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were loam above clay loam above clay.	WWI Class: N/A	
	Wetland Type(s): PFO - Hardwood swamp	
	Wetland Size: 0.01	Wetland Area Impacted 0.01
Hydrology: The feature is located within a depressional basin with a seasonally saturated hydrologic regime.	Vegetation: Plant Community Description(s): The wetland is a hardwood swamp located in a heavily logged area along an old logging road. The canopy is dominated by Fraxinus nigra and Abies balsamea, and Carex crinita is present throughout the wetland.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	N	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	N	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located near an old logging road
ST-1: basin wetland located within a heavily logged forest
WH-2: multiple strata represented, dominated by Fraxinus nigra
WH-8: located within a large forested block

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

There is low diversity within the wetland. The vegetation is comprised of native species expected within the plant community at a disturbed site.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
X	X		M	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
X	X	X	H	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		M	C	Human trails – unpaved
					Human trails – paved
					Removal of large woody debris
X	X		H	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is disturbed due to logging activities, and logging roads are present throughout the buffer area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity	✓				
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Low diversity, disturbed due to logging
Human Use Values	Located in a logged forest, potential for recreational hunting
Wildlife Habitat	Part of a large forested block with potential for multiple species habitat
Fish and Aquatic Life Habitat	No water present throughout the depression
Shoreline Protection	N/A
Flood and Stormwater Storage	Small basin wetland
Water Quality Protection	Sparse vegetation within wetland
Groundwater Processes	Majority of input is from rain water

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: wase070_u
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304158 Long: -90.648229 Datum: WGS84
 Soil Map Unit Name: Wormet sandy loam, 0 to 3 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sample point recorded in a mesic hardwood system that includes both coniferous and deciduous species.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: wase070_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u><i>Tsuga canadensis</i></u>	<u>37.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.00</u> (A/B)
2. <u><i>Acer saccharum</i></u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>52.5</u> = Total Cover				
Prevalence Index worksheet:				
Total % Cover of:		Multiply by:		
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>0</u>	x 2 =	<u>0</u>	
FAC species	<u>17</u>	x 3 =	<u>51</u>	
FACU species	<u>57.5</u>	x 4 =	<u>230</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>74.5</u>	(A)	<u>281</u>	(B)
Prevalence Index = B/A = <u>3.77</u>				
Hydrophytic Vegetation Indicators:				
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation				
<u> </u> 2 - Dominance Test is >50%				
<u> </u> 3 - Prevalence Index is ≤3.0 ¹				
<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Definitions of Vegetation Strata:				
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
Woody vines – All woody vines greater than 3.28 ft in height.				
Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u><i>Abies balsamea</i></u> <u>10</u> <u>Y</u> <u>FAC</u> 2. <u><i>Betula alleghaniensis</i></u> <u>5</u> <u>Y</u> <u>FAC</u> 3. <u><i>Prunus serotina</i></u> <u>5</u> <u>Y</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ _____ = Total Cover <u>20</u>				
Herb Stratum (Plot size: <u>5'</u>) 1. <u><i>Trientalis borealis</i></u> <u>2</u> <u>N</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____ _____ = Total Cover <u>2</u>				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ _____ = Total Cover <u>0.0</u>				
Remarks: (Include photo numbers here or on a separate sheet.) Mix of conifer and hardwood species in the canopy. Ground layer very sparse. Braun-Blanquet scale used.				

SOIL

Sampling Point: wase070_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No hydric soil indicators observed.



wase070_u_N



wase070_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was122f_w1
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.303891 Long: -90.647870 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Depressional wet forest feature; this portion dominated by black ash.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature with seasonal saturation.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasal22f_w1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>55</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>200</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.90</u>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>200</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>25</u>	x 1 = <u>25</u>																	
FACW species <u>65</u>	x 2 = <u>130</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>200</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex crinita</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Equisetum pratense</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Symphotrichum lateriflorum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4. <u>Athyrium angustum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. <u>Rubus pubescens</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Canopy dominated by black ash with mainly Carex crinita and E. pratense in the ground layer.																		

SOIL

Sampling Point: wasa122f_w1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☒ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R. MLRA 149B**)

- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Solid layer of black muck.



wasal22f_w1_N



wasal22f_w1_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-05
 Applicant/Owner: Enbridge State: WI Sampling Point: was122f_w2
 Investigator(s): NTT/ARK Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304054 Long: -90.648376 Datum: WGS84
 Soil Map Unit Name: Wormet sandy loam, 0 to 3 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Wet forest community with a mix of conifers and deciduous hardwoods. Classified here as a hardwood swamp over a coniferous swamp.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with a saturated hydrologic regime.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasal22f_w2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Tsuga canadensis</i></u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77.78</u> (A/B)														
2. <u><i>Thuja occidentalis</i></u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Betula alleghaniensis</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>260</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.60</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>260</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>40</u>	x 2 = <u>80</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>30</u>	x 4 = <u>120</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>100</u> (A)	<u>260</u> (B)																	
2. <u><i>Fraxinus nigra</i></u>	<u>10</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Carex scabrata</i></u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Matteuccia struthiopteris</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Carex crinita</i></u>	<u>5</u>	<u>Y</u>	<u>OBL</u>															
4. <u><i>Carex gracillima</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
5. <u><i>Equisetum pratense</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>30</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) Sample point has a mixed canopy of hemlock and cedar with a ground layer of sedges. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wasa122f_w2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Mucky loamy soil located at the surface.



wasal22f_w2_N



wasal22f_w2_S

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project	Evaluator(s): NTT/DGL		
File #: wasa122	Date of visit(s): 09/28/2019		
Location: PLSS: <u>044N-002W-08</u>	Ecological Landscape: North Central Forest		
Lat: <u>46.303719</u> Long: <u>-90.6480042</u>	Watershed: LS14 Upper Bad River		
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 815A, 5172C, Wormet sandy loam, 0 to 3 percent slopes, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were sampled at multiple points. Soils were muck and mucky mineral above sandy clay loam.	WWI Class: N/A		
	Wetland Type(s): PFO - Hardwood swamp		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">Wetland Size: 0.97</td> <td style="width: 50%; padding: 2px;">Wetland Area Impacted 0.97</td> </tr> </table>	Wetland Size: 0.97	Wetland Area Impacted 0.97
Wetland Size: 0.97	Wetland Area Impacted 0.97		
Hydrology: The feature is located within a depressional basin with a seasonally saturated hydrologic regime. Part of the feature is located along the edge of an intermittent stream.	Vegetation: Plant Community Description(s): The wetland is a hardwood swamp with a mixed canopy of black ash, white cedar and Eastern hemlock and the ground layer is dominated by sedges.		

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	N	N	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	N	N	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	N	N	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	Y	Y	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

WQ-4: located within a small basin alongside an intermittent stream
WH-2: hardwood swamp with tree, shrub, and ground layers present
GW-4: layer of muck present

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The floristic integrity is high as the wetland is located within an intact mesic forest and it is composed of a diverse assemblage of native species.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
					Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
X	X		M	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
	X		L	C	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is relatively undisturbed. There are ATV trails located nearby.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity			✓		
Human Use Values	✓				
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat		✓			
Shoreline Protection		✓			
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Intact and dominated by native species
Human Use Values	ATV trails nearby
Wildlife Habitat	Located within a large mesic hardwood forest, multiple strata represented
Fish and Aquatic Life Habitat	May support standing water, adjacent to stream
Shoreline Protection	Located along intermittent stream with woody and emergent vegetation
Flood and Stormwater Storage	Depressional basin wetland that surrounds an intermittent stream
Water Quality Protection	Dense vegetation throughout portions of the wetland
Groundwater Processes	Majority of input is from precipitation events, organic soil present within an area of wetland indicating potential groundwater discharge

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wasal22_u
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.304026 Long: -90.647945 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: (Explain alternative procedures here or in a separate report.)
 Sample point meets one of the three wetland parameters, but is lacking any signs of wetland hydrology and the soils are not hydric.

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: was122_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.50</u> (A/B)														
2. <u><i>Abies balsamea</i></u>	<u>25</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>75</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>57</u></td> <td>x 3 = <u>171</u></td> </tr> <tr> <td>FACU species <u>71</u></td> <td>x 4 = <u>284</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>133</u> (A)</td> <td><u>465</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.50</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>57</u>	x 3 = <u>171</u>	FACU species <u>71</u>	x 4 = <u>284</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>133</u> (A)	<u>465</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>57</u>	x 3 = <u>171</u>																	
FACU species <u>71</u>	x 4 = <u>284</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>133</u> (A)	<u>465</u> (B)																	
<u>25</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Abies balsamea</i></u>	<u>20</u>	<u>Y</u>	<u>FAC</u>															
2. <u><i>Corylus cornuta</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>25</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Acer saccharum</i></u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Dryopteris intermedia</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Carex pedunculata</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
4. <u><i>Equisetum pratense</i></u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
5. <u><i>Trientalis borealis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
6. <u><i>Maianthemum canadense</i></u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
7. <u><i>Brachyelytrum erectum</i></u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
8. <u><i>Pyrola elliptica</i></u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>33</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) The dominance test meets the criteria for wetland vegetation, but that is due to balsam fir. Otherwise this is a mesic forest system.																		

SOIL

Sampling Point: wasa122_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators present.



wasal22_u_N



wasal22_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was123f_w
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.303766 Long: -90.646974 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Hardwood swamp that includes an intermittent waterbody feature.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature likely with prolonged seasonal saturation .		

VEGETATION – Use scientific names of plants.

 Sampling Point: was123f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus nigra</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Abies balsamea</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>55</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>305</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.65</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>305</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>75</u>	x 3 = <u>225</u>																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>115</u> (A)	<u>305</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Abies balsamea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>10</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Carex pedunculata</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Glyceria striata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>															
3. <u>Athyrium angustum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
4. <u>Agrimonia striata</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Wet forest that includes black ash, balsam fir, and red maple.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														

SOIL

Sampling Point: wasa123f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☒ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R. MLRA 149B**)

- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Black muck soils.



wasal23f_w_N



wasal23f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): NTT/DGL	
File #: wasa123		Date of visit(s): 09/28/2019	
Location: PLSS: <u>044N-002W-08</u>		Ecological Landscape: North Central Forest	
Lat: <u>44.926851</u> Long: <u>-93.128184</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5172C, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were muck throughout the profile.		WWI Class: N/A Wetland Type(s): PFO - Hardwood swamp	
		Wetland Size: 0.07	Wetland Area Impacted 0.07
Hydrology: The hardwood swamp is located within a basin, with a seasonally saturated hydrologic regime. The feature is sparsely vegetated with likely prolonged seasonal saturation.		Vegetation: Plant Community Description(s): The hardwood swamp is located within an intact forest. The canopy is dominated by black ash with balsam fir and a sparse ground layer dominated by native graminoids.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	Y	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located near a cleared power line corridor along a heavily grazed cattle pasture
WH-2: located in a hardwood swamp surrounded by mesic hardwoods
SP-1: associated with an intermittent stream
GW-4: layer of muck present

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The floristic integrity is moderate due to intact canopy and dominance by native species. The feature is sparsely vegetated likely due to inundation.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
X	X		L	C	Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
X	X		M	C	Roads or railroad
	X		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
	X		L	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is located near an ATV trail with human disturbance throughout the area.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat	✓				
Shoreline Protection	✓				
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes		✓			

FUNCTION	RATIONALE
Floristic Integrity	Low diversity, dense canopy cover
Human Use Values	Located near an ATV trail
Wildlife Habitat	Part of a large block of mesic hardwood forest
Fish and Aquatic Life Habitat	No water present in wetland, dry creek bed within the wetland
Shoreline Protection	Associated with intermittent stream, woody and emergent vegetation
Flood and Stormwater Storage	Basin wetland, located along a small intermittent stream
Water Quality Protection	Sparse vegetation due to frequent inundation
Groundwater Processes	Receives runoff from nearby trail, organic soils, likely prolonged saturation, indicating groundwater recharge and potential discharge

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: wasal23_u
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.303817 Long: -90.647108 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) Sample recorded in a mesic hardwood system dominated by sugar maple.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: wasal23_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer saccharum</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.00</u> (A/B)														
2. <u>Ostrya virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>55</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>Corylus cornuta</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>17</u></td> <td>x 3 = <u>51</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>87</u> (A)</td> <td><u>341</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.92</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>17</u>	x 3 = <u>51</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>87</u> (A)	<u>341</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>17</u>	x 3 = <u>51</u>																	
FACU species <u>60</u>	x 4 = <u>240</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>87</u> (A)	<u>341</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>5</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Eurybia macrophylla</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Abies balsamea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Diervilla lonicera</u>	<u>10</u>	<u>Y</u>	<u>NI</u>															
4. <u>Clintonia borealis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
5. <u>Trientalis borealis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>37</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic hardwood system dominated by sugar maple.																		

SOIL

Sampling Point: wasa123_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators present.



wasal23_u_N



wasal23_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was124f_w
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.303431 Long: -90.647229 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Mesic to wet forest associated with an intermittent stream.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Feature receiving recharge via the associated waterway as well as from the surrounding landscape. Overall hydrologic regime of saturated but the duration decreases further away from the waterbody.		

VEGETATION – Use scientific names of plants.

 Sampling Point: was124f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus nigra</u>	<u>37.5</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. <u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>62.5</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Fraxinus nigra</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: Multiply by: </div> OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>52.5</u> x 2 = <u>105</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>92.5</u> (A) <u>215</u> (B) Prevalence Index = B/A = <u>2.32</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>10</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Carex crinita</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Athyrium angustum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Equisetum sylvaticum</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Dryopteris intermedia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0.0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Black ash and red maple throughout the canopy with scattered horsetail in the ground layer.				

SOIL

Sampling Point: wasa124f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input checked="" type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Muck soils at surface.



wasal24f_w_N



wasal24f_w_S

Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): NTT/DGL	
File #: wasa124		Date of visit(s): 09/28/2019	
Location: PLSS: <u>044N-002W-08</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.303267</u> Long: <u>-90.647235</u>		Watershed: LS14, Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 5173D, 5172C, Gogebic-Pence complex, 18 to 35 percent slopes, very stony, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. Soils were muck above silty clay loam.		WWI Class: N/A	
		Wetland Type(s): PFO - Hardwood swamp	
		Wetland Size: 0.51	Wetland Area Impacted 0.51
Hydrology: The hydrologic regime is saturated with recharge hydrology, and is associated with a waterbody. The duration of saturation decreases further away from the waterbody.		Vegetation: Plant Community Description(s): The hardwood swamp is dominated by black ash in the canopy, with a sparse understory of native species.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	Y	Y	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	Y	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	Y	Y	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	N	N	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	N	Y	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	Y	Y	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	Y	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	Y	Y	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU-3: located near a cleared power line corridor along a heavily grazed cattle pasture
WH-2: located in a hardwood swamp surrounded by mesic hardwoods
SP-1: associated with an intermittent stream
GW-4: a layer of muck is present

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat
	Y	Aquatic invertebrates

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

The floristic integrity is high as the wetland is intact with vegetation is comprised of native species.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
X	X		H	C	Agriculture – pasture
					Roads or railroad
X	X		M	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
					Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		L	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
					Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is located within a mesic hardwood forest with ATV trails nearby.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values		✓			
Wildlife Habitat			✓		
Fish and Aquatic Life Habitat	✓				
Shoreline Protection		✓			
Flood and Stormwater Storage		✓			
Water Quality Protection		✓			
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Intact with all strata present and native species dominance
Human Use Values	Located near ATV trails and potentially used for hunting
Wildlife Habitat	Part of a large block of mesic hardwood forest, multiple strata represented
Fish and Aquatic Life Habitat	No water present in wetland
Shoreline Protection	Associated with an intermittent stream, emergent and woody vegetation present
Flood and Stormwater Storage	Depressional basin, alongside a stream
Water Quality Protection	Sparse vegetation due to frequent inundation
Groundwater Processes	Likely serves as groundwater recharge

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was124_u
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.303428 Long: -90.647121 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland point is located within a mesic hardwood forest.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

Sampling Point: was124_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>37.5</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.00</u> (A/B)														
2. <u><i>Populus tremuloides</i></u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>47.5</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>29</u></td> <td>x 3 = <u>87</u></td> </tr> <tr> <td>FACU species <u>57.5</u></td> <td>x 4 = <u>230</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>91.5</u> (A)</td> <td><u>342</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.74</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>29</u>	x 3 = <u>87</u>	FACU species <u>57.5</u>	x 4 = <u>230</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>91.5</u> (A)	<u>342</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>29</u>	x 3 = <u>87</u>																	
FACU species <u>57.5</u>	x 4 = <u>230</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>91.5</u> (A)	<u>342</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Ostrya virginiana</i></u>	<u>10</u>	<u>Y</u>	<u>FACU</u>															
2. <u><i>Abies balsamea</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Corylus cornuta</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>20</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Carex pedunculata</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Abies balsamea</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Pteridium aquilinum</i></u>	<u>5</u>	<u>Y</u>	<u>FACU</u>															
4. <u><i>Rubus sp.</i></u>	<u>5</u>	<u>Y</u>	_____															
5. <u><i>Eurybia macrophylla</i></u>	<u>5</u>	<u>Y</u>	<u>UPL</u>															
6. <u><i>Trientalis borealis</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
7. <u><i>Symphytotrichum lateriflorum</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>29</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Mesic hardwood system with a canopy dominated by sugar maple. Braun-Blanquet scale used.																		

SOIL

Sampling Point: wasa124_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators present.



wasal24_u_N



wasal24_u_S

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd035f_w
 Investigator(s): MAL/AGG Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.300716 Long: -90.647759 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Hardwood swamp associated with waterbody sasd020e.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Saturated hydrological regime. Feature is associated with an ephemeral waterbody. Water marks observed on trees at a height of 4".		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd035f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																	
1. <u><i>Fraxinus nigra</i></u>	<u>25.0</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.33</u> (A/B)																																																
2. <u><i>Betula papyrifera</i></u>	<u>10.0</u>	<u>Y</u>	<u>FACU</u>																																																	
3. <u><i>Betula alleghaniensis</i></u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>																																																	
4. _____	_____	_____	_____																																																	
5. _____	_____	_____	_____																																																	
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7. _____	_____	_____	_____																																																	
<u>45.0</u> = Total Cover																																																				
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Prevalence Index = B/A = <u>1.81</u>																																																				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																																				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																				
Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																																																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>) <table style="width: 100%;"> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>5. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>6. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>7. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>					1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____	6. _____	_____	_____	_____	7. _____	_____	_____	_____																				
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Herb Stratum (Plot size: <u>5'</u>) <table style="width: 100%;"> <tr> <td>1. <u><i>Myosotis cf. scorpioides</i></u></td> <td><u>20.0</u></td> <td><u>Y</u></td> <td><u>OBL</u></td> </tr> <tr> <td>2. <u><i>Carex scabrata</i></u></td> <td><u>15.0</u></td> <td><u>Y</u></td> <td><u>OBL</u></td> </tr> <tr> <td>3. <u><i>Glyceria striata</i></u></td> <td><u>15.0</u></td> <td><u>Y</u></td> <td><u>OBL</u></td> </tr> <tr> <td>4. <u><i>Dryopteris intermedia</i></u></td> <td><u>5.0</u></td> <td><u>N</u></td> <td><u>FAC</u></td> </tr> <tr> <td>5. <u><i>Carex crinita</i></u></td> <td><u>5.0</u></td> <td><u>N</u></td> <td><u>OBL</u></td> </tr> <tr> <td>6. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>7. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>8. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>9. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>10. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>11. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>12. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table>					1. <u><i>Myosotis cf. scorpioides</i></u>	<u>20.0</u>	<u>Y</u>	<u>OBL</u>	2. <u><i>Carex scabrata</i></u>	<u>15.0</u>	<u>Y</u>	<u>OBL</u>	3. <u><i>Glyceria striata</i></u>	<u>15.0</u>	<u>Y</u>	<u>OBL</u>	4. <u><i>Dryopteris intermedia</i></u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>	5. <u><i>Carex crinita</i></u>	<u>5.0</u>	<u>N</u>	<u>OBL</u>	6. _____	_____	_____	_____	7. _____	_____	_____	_____	8. _____	_____	_____	_____	9. _____	_____	_____	_____	10. _____	_____	_____	_____	11. _____	_____	_____	_____	12. _____	_____	_____	_____
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<u>0.0</u> = Total Cover																																																				
Remarks: (Include photo numbers here or on a separate sheet.) Herb stratum with notable bare ground cover due to occasional flooding as well as mixed sedges. Primarily black ash within the canopy.																																																				

SOIL

Sampling Point: wasd035f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Depleted matrix observed at 6 inches.



wasd035f_w_N



wasd035f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION		
Project name: Line 5 Relocation Project	Evaluator(s): MAL/AGG	
File #: wasd035	Date of visit(s): 10/17/2019	
Location: PLSS: <u>044N-002W-08</u>	Ecological Landscape: North Central Forest	
Lat: <u>46.30071</u> Long: <u>-90.647785</u>	Watershed: LS14 Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>		
SITE DESCRIPTION		
Soils: Mapped Type(s): 5172C, Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes Field Verified: Series not verified. The soils consist of a silt loam texture.	WWI Class: N/A	
	Wetland Type(s): PFO - Floodplain Forest	
	Wetland Size: 0.10	Wetland Area Impacted 0.10
Hydrology: The feature is a saturated black ash floodplain. Associated with an intermittent waterbody.	Vegetation: Plant Community Description(s): The ground layer contains scattered sedges with bare ground patches prominent. The tree layer is primarily black ash.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	Y	Used for recreation (hunting, birding, hiking, etc.). List: Hunting
2	N	N	Used for educational or scientific purposes
3	N	N	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	N	N	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	N	N	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	Y	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

ST-1, WQ-2: The feature is a depression along an access road. ST-3, WQ-5: Herbaceous cover at roughly 40% with notable bare ground.

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
	Y	The wetland supports arboreal species including songbirds and squirrels.

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

Floristic integrity is low due to overall low diversity. The wetland contains sparse sedge cover and black ash within the canopy.

SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
					Agriculture – pasture
					Roads or railroad
	X		L	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
	X		L	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
					Removal of tree or shrub strata – logging, unprescribed fire
	X		M	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		M	C	Cover of non-native and/or invasive species
					Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
	X		L	C	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

The wetland is associated with an access road. There is earthworm activity within the soil as well as invasive species cover.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat	✓				
Fish and Aquatic Life Habitat		✓			
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Overall low diversity across three strata dominated by sedges and black ash. There is some invasive species cover within the herbaceous layer.
Human Use Values	Not accessible to the public or used for recreation or research.
Wildlife Habitat	The feature is rather small, linear, and contains minimal plant species.
Fish and Aquatic Life Habitat	The feature likely occasionally supports standing water.
Shoreline Protection	N/A
Flood and Stormwater Storage	The feature is capable of holding substantial quantities of water due to the size and location of the wetland.
Water Quality Protection	The feature is associated with a small ephemeral waterbody.
Groundwater Processes	The wetland is fed by precipitation and runoff primarily with no indicators of groundwater activity.

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-10-17
 Applicant/Owner: Enbridge State: WI Sampling Point: wasd035_u
 Investigator(s): MAL/AGG Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.300711 Long: -90.647524 Datum: WGS84
 Soil Map Unit Name: Gogebic, very stony-Pence, very stony-Cathro complex, 0 to 18 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) <u>The sample point occurs on a slight slope with scattered herbaceous and tree cover.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>No primary or secondary indicators of wetland hydrology observed.</u>		

VEGETATION – Use scientific names of plants.

 Sampling Point: wasd035_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u><i>Acer saccharum</i></u>	<u>20.0</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2.0</u> (A) Total Number of Dominant Species Across All Strata: <u>5.0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0</u> (A/B)														
2. <u><i>Betula alleghaniensis</i></u>	<u>15.0</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>35.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u><i>Ostrya virginiana</i></u>	<u>15.0</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0.0</u></td> <td>x 1 = <u>0.0</u></td> </tr> <tr> <td>FACW species <u>0.0</u></td> <td>x 2 = <u>0.0</u></td> </tr> <tr> <td>FAC species <u>30.0</u></td> <td>x 3 = <u>90.0</u></td> </tr> <tr> <td>FACU species <u>62.0</u></td> <td>x 4 = <u>248.0</u></td> </tr> <tr> <td>UPL species <u>0.0</u></td> <td>x 5 = <u>0.0</u></td> </tr> <tr> <td>Column Totals: <u>92.0</u> (A)</td> <td><u>338.0</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0.0</u>	x 1 = <u>0.0</u>	FACW species <u>0.0</u>	x 2 = <u>0.0</u>	FAC species <u>30.0</u>	x 3 = <u>90.0</u>	FACU species <u>62.0</u>	x 4 = <u>248.0</u>	UPL species <u>0.0</u>	x 5 = <u>0.0</u>	Column Totals: <u>92.0</u> (A)	<u>338.0</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0.0</u>	x 1 = <u>0.0</u>																	
FACW species <u>0.0</u>	x 2 = <u>0.0</u>																	
FAC species <u>30.0</u>	x 3 = <u>90.0</u>																	
FACU species <u>62.0</u>	x 4 = <u>248.0</u>																	
UPL species <u>0.0</u>	x 5 = <u>0.0</u>																	
Column Totals: <u>92.0</u> (A)	<u>338.0</u> (B)																	
2. <u><i>Quercus rubra</i></u>	<u>2.0</u>	<u>N</u>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>17.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u><i>Adiantum pedatum</i></u>	<u>25.0</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u><i>Athyrium angustum</i></u>	<u>10.0</u>	<u>Y</u>	<u>FAC</u>															
3. <u><i>Dryopteris intermedia</i></u>	<u>5.0</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>40.0</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Scattered fern cover along with sugar maple and yellow birch in the canopy.																		

SOIL

Sampling Point: wasd035_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators observed.



wasd035_u_N



wasd035_u_W

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was125f_w
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.302897 Long: -90.644209 Datum: WGS84
 Soil Map Unit Name: Pence sandy loam, 6 to 15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) Disturbed wetland feature with a canopy of quaking aspen. Would classify under Cowardin as a forested wetland. Not a true hardwood swamp under the Eggers and Reed system, but this would be the only and best option.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Roadside depression dominated by hydrophytic vegetation.		

VEGETATION – Use scientific names of plants.

 Sampling Point: was125f_w

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Populus tremuloides</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>50</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92</u> (A)</td> <td><u>218</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.37</u>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92</u> (A)	<u>218</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>25</u>	x 1 = <u>25</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>92</u> (A)	<u>218</u> (B)																	
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Calamagrostis canadensis</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Onoclea sensibilis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
3. <u>Rubus idaeus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4. <u>Cornus alba</u>	<u>5</u>	<u>N</u>	<u>FACW</u>															
5. <u>Acer saccharum</u>	<u>2</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>42</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Includes an unknown bristle-berry.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														

SOIL

Sampling Point: wasa125f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,
<input type="checkbox"/> Histic Epipedon (A2)	MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Soils were not sampled due to the proximity of potential underground utilities within the roadside ditch. Soils are assumed to be hydric based on landscape position and vegetation.



wasal25f_w_N



wasal25f_w_S

**Wisconsin Department of Natural Resources
Wetland Rapid Assessment Methodology – version 2.0**

WETLAND IDENTIFICATION			
Project name: Line 5 Relocation Project		Evaluator(s): NTT/DGL	
File #: wasa125		Date of visit(s): 09/28/2019	
Location: PLSS: <u>044N-002W-08</u>		Ecological Landscape: North Central Forest	
Lat: <u>46.3028158</u> Long: <u>-90.644204</u>		Watershed: LS14 Upper Bad River	
County: <u>Ashland</u> Town/City/Village: <u>Morse town</u>			
SITE DESCRIPTION			
Soils: Mapped Type(s): 215C, Pence sandy loam, 6 to 15 percent slopes		WWI Class: N/A	
Field Verified: Soils were not sampled due to the proximity of potential underground utilities within the roadside ditch. Soils are assumed to be hydric based on landscape position and vegetation.		Wetland Type(s): PFO-Hardwood swamp	
Hydrology: The wetland is seasonally saturated with hydrology indicators FAC-Neutral and geomorphic position being present.		Wetland Size: 0.01	Wetland Area Impacted 0.01
		Vegetation: Plant Community Description(s): The plant community is a hardwood swamp located within a basin. The canopy is dominated by quaking aspen with a sparse ground layer of native species.	

SITE MAP

SECTION 1: Functional Value Assessment

HU	Y/N	Potential	Human Use Values: recreation, culture, education, science, natural scenic beauty
1	N	N	Used for recreation (hunting, birding, hiking, etc.). List:
2	N	N	Used for educational or scientific purposes
3	Y	Y	Visually or physically accessible to public
4	N	N	Aesthetically pleasing due to diversity of habitat types, lack of pollution or degradation
5	N	N	In or adjacent to RED FLAG areas List:
6	N	N	Supports or provides habitat for endangered, threatened or special concern species
7			In or adjacent to archaeological or cultural resource site
WH			Wildlife Habitat
1	N	N	Wetland and contiguous habitat >10 acres
2	Y	Y	3 or more strata present (>10% cover)
3	N	N	Within or adjacent to habitat corridor or established wildlife habitat area
4	Y	Y	100 m buffer – natural land cover ≥50%(south) 75% (north) intact
5	N	N	Occurs in a Joint Venture priority township
6	Y	Y	Interspersion of habitat structure (hemi-marsh, shrub/emergent, wetland/upland complex, etc.)
7	N	Y	Supports or provides habitat for SGCN or birds listed in the WI All-Bird Cons. Plan, or other plans
8	Y	Y	Part of a large habitat block that supports area sensitive species
9	N	N	Ephemeral pond with water present ≥ 45 days
10	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
11	N	N	Seasonally exposed mudflats present
12	N	N	Provides habitat scarce in the area (urban, agricultural, etc.)
FA			Fish and Aquatic Life Habitat
1	N	N	Wetland is connected or contiguous with perennial stream or lake
2	N	Y	Standing water provides habitat for amphibians and aquatic invertebrates
3	N	N	Natural Heritage Inventory (NHI) listed aquatic species within aquatic system
4	N	Y	Vegetation is inundated in spring
SP			Shoreline Protection
1	NA	NA	Along shoreline of a stream, lake, pond or open water area (≥1 acre) - if no, not applicable
2	NA	NA	Potential for erosion due to wind fetch, waves, heavy boat traffic, erosive soils, fluctuating water levels or high flows – if no, not applicable
3	NA	NA	Densely rooted emergent or woody vegetation
ST			Storm and Floodwater Storage
1	Y	Y	Basin wetland, constricted outlet, has through-flow <u>or</u> is adjacent to a stream
2	Y	Y	Water flow through wetland is NOT channelized
3	N	N	Dense, persistent vegetation
4	N	N	Evidence of flashy hydrology
5	N	N	Point or non-point source inflow
6	N	N	Impervious surfaces cover >10% of land surface within the watershed
7	N	N	Within a watershed with ≤10% wetland
8	N	N	Potential to hold >10% of the runoff from contributing area from a 2-year 24-hour storm event
WQ			Water Quality Protection
1	N	N	Provides substantial storage of storm and floodwater based on previous section
2	Y	Y	Basin wetland <u>or</u> constricted outlet
3	Y	Y	Water flow through wetland is NOT channelized
4	N	N	Vegetated wetland associated with a lake or stream
5	N	N	Dense, persistent vegetation
6	N	N	Signs of excess nutrients, such as algae blooms, heavy macrophyte growth
7	N	N	Stormwater or surface water from agricultural land is major hydrology source
8	N	N	Discharge to surface water
9	N	N	Natural land cover in 100m buffer area < 50%
GW			Groundwater Processes
1	N	N	Springs, seeps or indicators of groundwater present
2	N	N	Location near a groundwater divide or a headwater wetland
3	N	N	Wetland remains saturated for an extended time period with no additional water inputs
4	N	N	Wetland soils are organic
5	N	N	Wetland is within a wellhead protection area

Section 1 Comments (Refer to Section 1 numbers)

HU3- located near a cleared ATV trail WH2- located in a hardwood swamp surrounded by mesic hardwoods.

Wildlife Habitat and Species Observation (including amphibians and reptiles)

List: direct observation, tracks, scat, other sign; type of habitat: nesting, migratory, winter, etc.

Observed	Potential	Species/Habitat/Comments
Y	Y	White-tailed deer
Y	Y	Songbirds
	Y	Frogs

Fish and Aquatic Life Habitat and Species Observations

List: direct observation, other sign; type of habitat: nesting, spawning, nursery areas, etc.

Observed	Potential	Species/Habitat

Plant Community Integrity (circle)*

*Note: separate plant communities are described independently

[illegible]

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SECTION 3: Condition Assessment of Wetland Assessment Area (AA) and Buffer (100 m)

Assessment Area (AA)	Buffer	Historic	Impact Level*	Relative Frequency**	Stressor
					Filling, berms (non-impounding)
					Drainage – tiles, ditches
					Hydrologic changes - high capacity wells, impounded water, increased runoff
					Point source or stormwater discharge
					Polluted runoff
					Pond construction
					Agriculture – row crops
					Agriculture – hay
X	X		H	C	Agriculture – pasture
					Roads or railroad
X	X		M	C	Utility corridor (above or subsurface)
					Dams, dikes or levees
					Soil subsidence, loss of soil structure
					Sediment input
	X		L	C	Removal of herbaceous stratum – mowing, grading, earthworms, etc.
	X		L	C	Removal of tree or shrub strata – logging, unprescribed fire
	X		L	C	Human trails – unpaved
					Human trails – paved
	X		L	C	Removal of large woody debris
X	X		L	C	Cover of non-native and/or invasive species
	X		L	C	Residential land use
					Urban, commercial or industrial use
					Parking lot
					Golf course
					Gravel pit
	X		L	C	Recreational use (boating, ATVs, etc.)
					Excavation or soil grading
					Other (list below):

* L= Low, M = Medium, H = High

**Relative frequency of the impact in comparison to the general condition of wetlands and buffer areas in the region or watershed (C=Common, UC=Uncommon)

SUMMARY OF CONDITION ASSESSMENT (Include general description and comments)

Trails are evident through the area as well as nearby buildings and debris.

SUMMARY OF FUNCTIONAL VALUES

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	NA
Floristic Integrity		✓			
Human Use Values	✓				
Wildlife Habitat		✓			
Fish and Aquatic Life Habitat	✓				
Shoreline Protection					✓
Flood and Stormwater Storage	✓				
Water Quality Protection	✓				
Groundwater Processes	✓				

FUNCTION	RATIONALE
Floristic Integrity	Native species dominance
Human Use Values	Located near an ATV trail
Wildlife Habitat	Part of a large block of mesic hardwood forest.
Fish and Aquatic Life Habitat	No water present in wetland.
Shoreline Protection	N/A
Flood and Stormwater Storage	Small wetland can hold some runoff from adjacent trail
Water Quality Protection	Sparse vegetation due to frequent inundation
Groundwater Processes	Serves as groundwater recharge

Section 4: Project Impact Assessment

Brief Project Description

Enbridge Line 5 pipeline route analysis.

Expected Project Impacts

IMPACT: describe (+ or -)	Permanence/Reversibility	Significance (Low, Medium, High)
Direct Impacts	Temporary trenching, soil storage, and backfilling.	Low
Secondary Impacts (including impacts which are indirectly attributable to the project)	Vegetation removal for construction.	Medium
Cumulative Impacts	Operational vegetation maintenance.	Low
Spatial/Habitat Integrity	Temporary construction impacts.	Medium
Rare Plant/Animal Communities/ Natural Areas	N/A	N/A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 5 Relocation Project City/County: Ashland Sampling Date: 2019-09-28
 Applicant/Owner: Enbridge State: WI Sampling Point: was125_u
 Investigator(s): NTT/DGL Section, Township, Range: 044N-002W-08
 Landform (hillslope, terrace, etc.): Talf Local relief (concave, convex, none): None Slope (%): 0-2%
 Subregion (LRR or MLRA): Northcentral Forests Lat: 46.302823 Long: -90.644221 Datum: WGS84
 Soil Map Unit Name: Pence sandy loam, 6 to 15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) The upland point is located on an ATV trail. Sample point is shared with wetland was126f.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

VEGETATION – Use scientific names of plants.

 Sampling Point: was125_u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>285</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.80</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>285</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>60</u>	x 4 = <u>240</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>75</u> (A)	<u>285</u> (B)																	
<u>0.0</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Poa pratensis</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Rubus idaeus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
3. <u>Ranunculus acris</u>	<u>5</u>	<u>N</u>	<u>FAC</u>															
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
5. <u>Plantago major</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
<u>75</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>0.0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) ATV trail dominated by turf grass and disturbance-tolerant species.																		

Hydrophytic Vegetation Present?
 Yes _____ No ✓

SOIL

Sampling Point: wasa125_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, |
| <input type="checkbox"/> Histic Epipedon (A2) | MLRA 149B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Soils were not sampled due to the proximity of potential underground utilities. Soils are assumed to be non-hydric based on landscape position and vegetation.



wasal25_u_E



wasal25_u_W